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NATIONAL PETROLEUM NEWS

Refining Technology EDITION

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JUNE 29, 1938

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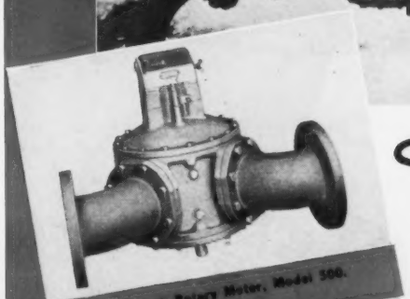

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NATIONAL PETROLEUM NEWS—June 29, 1938—Vol. XXX—No. 26
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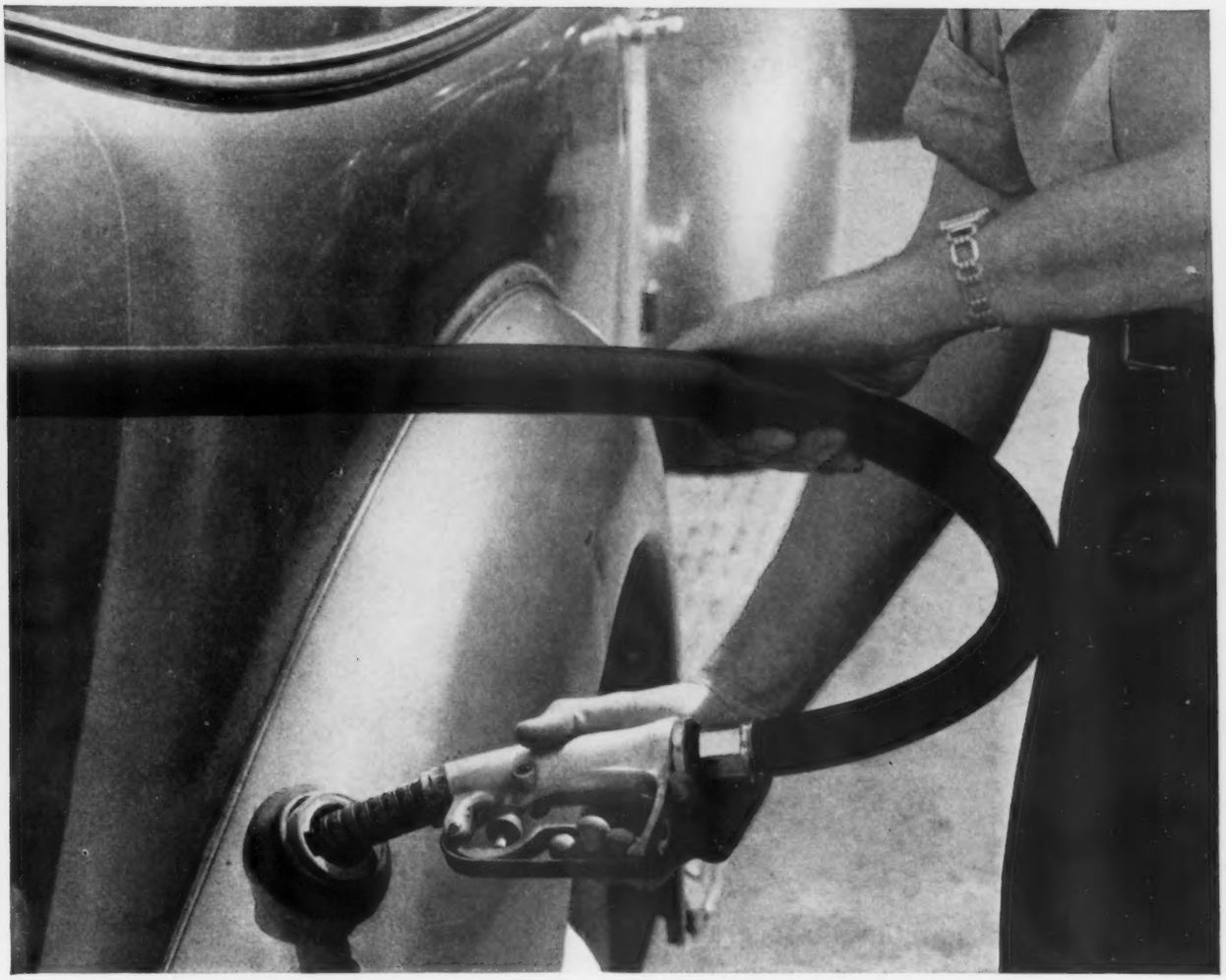

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THE lightest, easiest-handling hose your men ever used. *No rigid metal, no stiff wire.* A stranded static wire completely imbedded in hose wall flexes with the hose like cotton cord. *Braided like lawn hose Synthetic inner compounds.*

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Most regular gasoline has in it anti-knock fluid (containing tetraethyl lead). The spark can be considerably advanced for more power without "knock" or "ping."

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ETHYL GASOLINE CORPORATION, *manufacturer of anti-knock fluids used by oil companies to improve gasoline*

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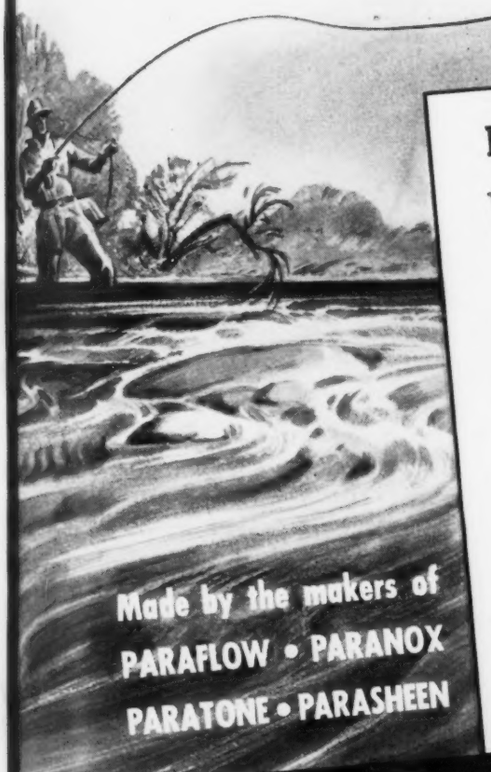

Many major refiners and jobbers get and hold customers WITH PARATAC

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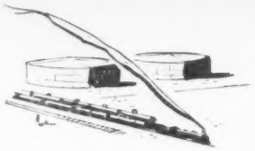

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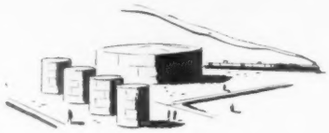

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capital cost,
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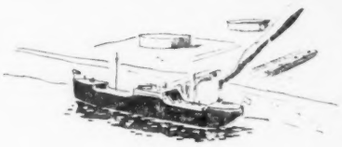
50%



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complete cargoes.
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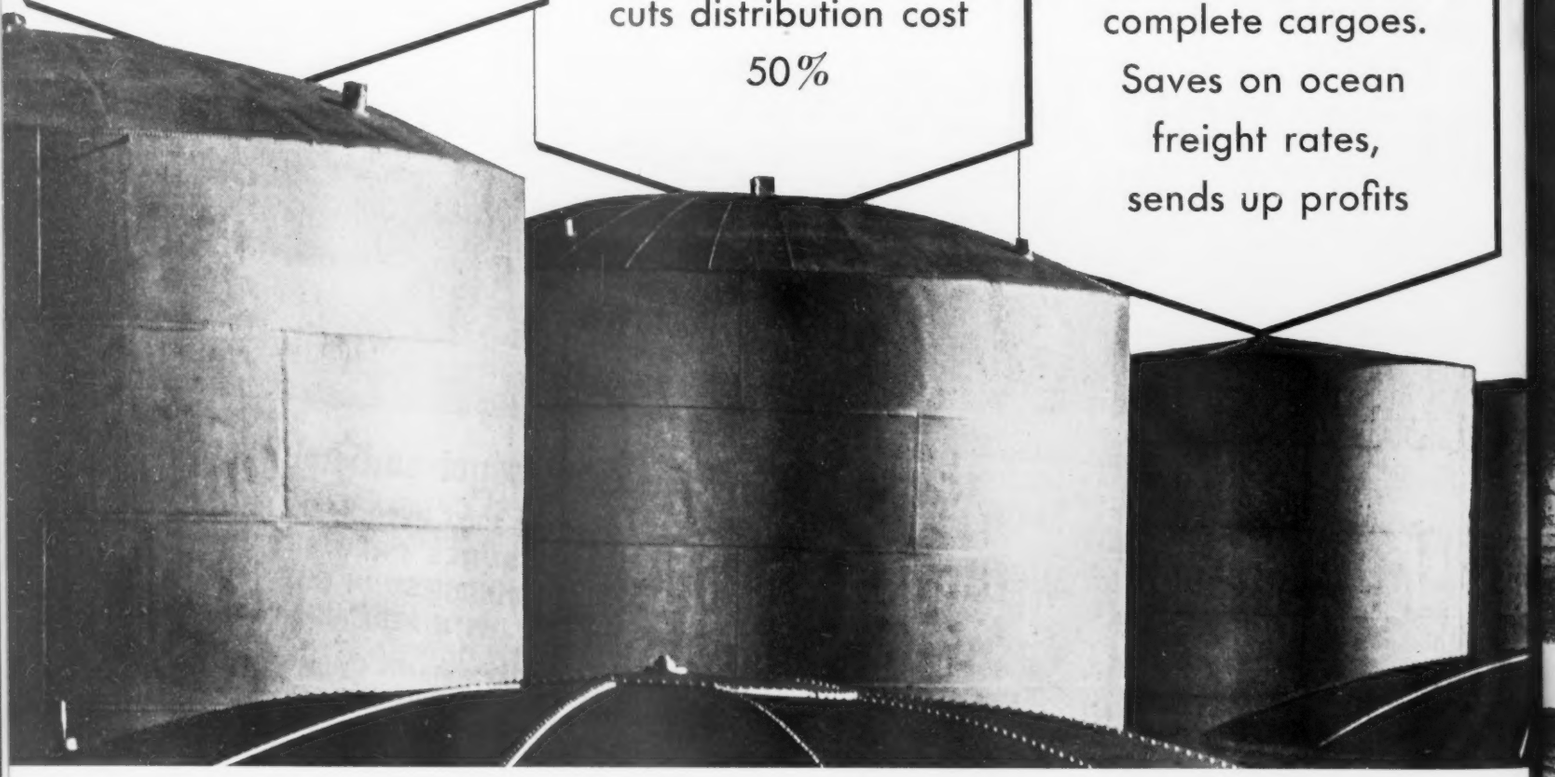
freight rates,
sends up profits



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John S. Cordell

John S. Cordell is vice president and general manager of Cities Service Oil Co. (Pennsylvania), the recently effected consolidation of the eastern marketing, refinery, transportation and export properties of the Cities Service interests. Since 1924 he has been active head of the Cities Service Refining Co. in Boston, one of the companies included in the consolidation.

From 1916 to 1924 he was assistant, then sales manager, of Empire Refineries, at Tulsa, another Cities Service properties. His earliest years in business were in the southwest as railroad clerk, bank cashier and manager of a trading company.

News By Teletype From 4 News Bureaus

National Petroleum News

News From Oil Industry Everywhere

VOLUME 30 WEDNESDAY, JUNE 29, 1938 NUMBER 26

Subpoenas are Issued for New Madison Oil Probe

Buyers Warn Of Too High Kansas July Allowable

By Teletype
N. P. N. News Bureau

TULSA, June 28.—Three major purchasers of Kansas crude oil warned the Kansas Corporation Commission June 27 at the monthly hearing in Wichita that the U. S. Bureau of Mines forecast of July demand for Kansas crude is far too high. The July forecast by the federal agency of 172,300 barrels daily for this state was asserted to be 15 to 25 per cent in excess of requirements.

Action of the Kansas supreme court in staying temporary orders issued by the District Court of Cowley county put proration back into the hands of the Kansas Corporation Commission. Two such orders had been issued having the effect of opening wells of complainants wide. The higher court thus provided for enforcement of proration, pending final hearings.

The Kansas commission gave no indication of what the July allowable order will contain. Buyers assert it would be quite easy to bring back pipeline proration by raising allowables materially over the June figure.

Some Kansas Quotas Up

Operators in Cowley county, Kans., continued to nick at the June proration schedule, in court action and in appeals to the Corporation Commission, and were generally successful in getting their quotas raised. The situation is a local one. When Kanotex Refining Co. reduced the price of crude on May 10 by 25 cents, some operators shortly thereafter shut in their properties in Cowley and Sumner counties, in pools served by the Kanotex pipelines.

Recently, four Cowley county operators sought higher allowables, citing the larger market demand offered by Kanotex. Two of them went to local district court and both were successful. The commission raised

(*Continued on page* 19)

Judge Stone May Rule

MADISON, June 27.—Federal Judge Patrick T. Stone told an N.P.N. representative today that he would probably rule on motions, to set aside guilty verdicts of last January in the tank car case, on July 19 but that he might rule earlier than that date—possibly July 14. Several weeks ago, Judge Stone had tentatively set July 12 for making his rulings on the motions.

Court attaches confirmed reports that the federal grand Jury would convene July 12 but gave no information on matters to be presented.

Broad Inquiry into Oil Marketing By Federal Grand Jury Indicated

By A. M. PETTY
N.P.N. News Editor

CLEVELAND, June 28.—Oil marketing practices in the Middle West are to be put through the wringer of another federal grand jury investigation at Madison, Wis., beginning July 12.

The grand jurors will start their inquiry just a few days before Federal Judge Patrick T. Stone is scheduled to rule on motions to set aside guilty verdicts returned last January against 16 corporations and 30 individuals in the "buying program" indictment.

Subpoenas have been issued for 20 or more oil companies and their officials, although at a late hour this afternoon a check-up by NATIONAL PETROLEUM NEWS, covering the East, Middle West and Mid-Continent, revealed that only four subpoenas have been actually served so far.

While declining to disclose to whom the subpoenas have been issued, justice department officials indicated that the list would include officials of virtually all the companies named as defendants in the second Madison case, involving jobber contracts.

The second Madison indictment, which charged a conspiracy to fix margins and other provisions in jobber contracts, was thought to be settled for all but eight of the companies—and eight of their officials—named as defendants.

On June 2, thirteen companies and 11 of their officials entered pleas of *nolo contendere* in a hearing before Judge Stone at Madison. Their pleas were accepted by the court and fines totaling $385,000 were assessed and paid. The indictment was dismissed against all remaining officials of the companies entering nolo pleas.

The eight companies, not entering nolo pleas, who elected to go to trial in September, were Gulf Refining Co., The Texas Co., Tidewater Associated Oil Co., Barnsdall Refining Co., The Globe Oil & Refining companies (of Oklahoma, Illinois and Kansas), and The National Refining Co.

Subpoena Lists Companies

One of the subpoenas served so far calls for data on jobber margins and contracts *since* Dec. 23, 1936—the date is significant because it is one day after the Madison grand jury returned the tank car indictment (on which convictions were obtained Jan. 22, 1938) and the jobber-contract indictment (to

Oil Marketing Probe Is Urged Upon Anti-Monopoly Committee

By Teletype

WASHINGTON, June 28.—George M. Tunison, attorney for L. L. Coryell, Lincoln, Nebr., Independent oil marketer operating in several states, is in Washington seeking to have the O'Mahoney monopoly investigating committee turn its spotlight on oil marketing practices in the Middle West.

The 11-man committee, set up under the O'Mahoney anti-monopoly resolution passed at the recent congressional session, was provided with $500,000 to investigate "monopolistic practices" in industry generally and report back with recommendations for changes in federal anti-trust laws.

Following a visit to the Department of Justice June 27 where he conferred with Assistant Attorney General Thurman Arnold, in charge of the anti-trust division, Tunison visited "several" members of O'Mahoney committee and urged that they include in their aggenda an investigation of the gasoline business. Arnold is a member of the committee. No hearings have been held as yet.

The Coryell attorney told N.P.N. today that he expected to contact other members of the monopoly committee this week.

Tunison's conference with Arnold, it was said at the justice department, had a "double-barreled" purpose—to urge that the monopoly committee, of which Arnold is a member, investigate oil marketing and to complain to the anti-trust division about practices which, Tunison said, are "squeezing" the independent oil marketer out of existence.

Tunison charged that major oil companies have been curtailing their own manufacture of gasoline and buying from independent refiners in large quantities, a practice which, he said, has resulted in increased tank car prices. The tank wagon price, at which the Independent marketer "must" sell, however, has not advanced at all, he added.

"If these conditions continue," the Coryell representative told N.P.N., "they will jeopardize the position of the Independent marketer. The major companies are buying up the output of independent refiners and pegging the tank car price at increasingly high levels."

Justice department officials said that Tunison had been advised that the practices he complained of "probably" would be aired before the federal grand jury which has been called to convene July 12 at Madison.

which some defendants entered nolo pleas June 2, 1938). Both indictments were returned Dec. 22, 1936, and did *not* make any charges covering practices since that date.

This particular subpoena calls for copies of all telegrams, letters and other data on jobber contracts, along with originals of any communications with a number of companies, listed, concerning such contracts or conferences with any of these companies on jobber margins or contracts. In each instance only data subsequent to Dec. 23, 1936 was asked for.

Included in the list of companies named in the subpoena were all of the defendant companies named in the jobber contract indictment. Besides the eight companies not entering nolo pleas June 2 (listed above), others in the subpoena list were: Socony-Vacuum Oil Co., Inc., Standard Oil Co. of Indiana, Cities Service Co., Continental Oil Co.,. Gulf Oil Corp., The Pure Oil Co., Shell Petroleum Co., Sinclair Refining Co., Mid-continent Petroleum Co., Phillips Petroleum Co., The Ohio Oil Co., Deep Rock Oil Corp., Empire Oil Refining Co., Cities Service Oil Co., and Wadhams Oil Co.

More Than Jobber Contracts

Although the subpoena indicates by the data called for that the new Madison investigation —which will be conducted by the regular federal grand jury for the western district of Wisconsin—will concern jobber contracts, there were signs that other angles of oil marketing would be delved into, including current gasoline prices.

Most significant of these indications of a broad inquiry by the Madison probers was the statement of a justice department official that the grand jury "probably" would look into charges that inter-refinery buying had resulted in advances in the gasoline tank car market and that the Independent marketer was being subjected to a "squeeze play" because there had been no advances in tank wagon prices.

The justice department spokesman told N.P.N. that this assurance had been given to George M. Tunison, attorney for L. L. Coryell, Lincoln, Nebr., large Independent marketer, who had complained of the "squeeze play" to Assistant Attorney General Arnold in charge of the department's anti-trust division.

Like A Thunderclap

News of the impending grand jury probe at Madison came like a thunderclap to many oil company executives and marketers. In nearly every case, except for

(*Continued on page* 11)

Platt Testifies In New York Oil Probe

By G. T. KELLOGG
N.P.N. Staff Writer

NEW YORK, June 25.—New York's legislative committee investigating the oil industry turned its attention to oil trade papers this week to see "whether they are subsidized."

Four representatives of trade publications were questioned at a two-day hearing. A fifth was invited to appear, did not show up; later a subpoena was issued for his appearance, but was not served.

Witnesses questioned included Warren C. Platt, editor and publisher of National Petroleum News and *Platt's Oilgram;* Charles Bensky, publisher of the house organ of the Interborough Petroleum Dealers' Chamber of Commerce; Louis Kimmel, representing "Gasoline Merchants' Advisor," New York City paper which recently suspended publication; and T. R. Langley, news editor of "The Gasoline Retailer."

The witness who did not accept the committee's invitation to appear was H. A. Inness-Brown, publisher of "The Gasoline Retailer." Chairman Harold B. Ehrlich, Buffalo assemblyman, said the committee intended to question Inness-Brown at a subsequent hearing, probably in September.

The session of the New York investigating group was called, according to Ehrlich, to probe into the question of whether oil trade publications are subsidized by the major oil companies. Several weeks ago at a meeting of Bensky's retail organization, Ehrlich said "we have found for the most part (the trade publications) to be subsidized by major interests, and working with them and for them."

At the outset of the hearing the chairman added that "we have every reason to believe certain trade journals are not truly organs representing the groups they pretend to represent."

Chief witness at the hearings, in point of time spent on the stand, and insofar as any of the testimony was made public, was Platt, at the close of whose testimony Ehrlich said he had no evidence which would lead him to believe that the Platt papers were subsidized "in any way" by the major companies.

Hearings on the opening day of the two-day session were held behind closed doors, Ehrlich explaining that he was not holding "secret hearings," but was closing them to "protect" those publications which did not wish to reveal their policies or practices to the press generally or to competitors.

During this first day's session, Bensky, Kimmel and Langley were questioned, but no information was given out as to questions asked or testimony taken during the brief hearing.

Following this session, Inness-Brown gave out a statement to the New York morning papers, charging that the committee, in holding the sessions behind closed doors was seeking to intimidate publishers of trade papers, and declaring that he was "outraged" by the procedure.

Next morning, Thursday, June 23, Ehrlich said that since Inness-Brown had indicated he did not plan to appear before the committee in response to the invitation issued earlier, a subpoena had been issued, and a process-server sent to hand it to the publisher.

That afternoon the chairman announced that the process-server had not located Inness-Brown, and that the subpoena had been withdrawn for the present. Ehrlich announced his intention, however, of questioning Inness-Brown at a later session of the committee.

Meetings Thrown Open

Ehrlich also announced on the morning of June 23 that, since Inness-Brown had protested so vehemently against the closed sessions, the hearing would be opened to the press from then on so far as Inness-Brown's testimony, and that of any other witness who so wished, was concerned. He reiterated his statement that they were closed only as a move to "protect" the witnesses' policies and other matters on which they testified.

Only witness to appear at the morning session the second day was Langley, of "Gasoline Retailer," who had been questioned the day before, June 22. Langley told the committee he still didn't know the answers to questions which had been asked him the day before concerning practices, policies and revenues of his publication.

Langley said that, while he is listed in the "masthead" as news editor, for the past several years he has been devoting most of his time to other Inness-Brown publications, and therefore could not answer questions relating to "Gasoline Retailer."

Asked if he had made any effort to find out the answers to questions asked him the day before, Langley said he had not. Among these, re-propounded on the second appearance, was a question as to the percentage of his publication's revenue which comes in from major company advertising. He said he did not know the answer.

At the close of Langley's second appearance on the stand, Alger Williams, committee counsel, said that the refusal of Inness-Brown to appear and the inability of Langley to answer the committee's questions constituted the first case in which the committee has met with "lack of co-operation" in its more than two years of existence.

He also told Langley to tell Inness-Brown that "we'll get him here by subpoena, later."

"Voluntary Appearance"

Platt appeared at the afternoon session Thursday, the second day, and before any testimony was taken, Ehrlich stated for the record that the National Petroleum News publisher was appearing voluntarily.

He said subpoena had been served on an employe in the New York office of the Platt publications, but that the publisher himself had chosen to come on from Cleveland and appear before the committee.

First question asked of Platt was whether he considered National Petroleum News the spokesman for any particular group or class within the oil industry.

"No, I do my own talking," Platt answered, adding that "we're reporters of news and facts of the entire industry. As for editorial opinion, I speak for myself."

Committee Counsel Williams asked Platt if it were not true than "most" of his editorials in recent years had been favorable to the major company point of view.

Platt rejoined that he thought a look back through the files of N.P.N. would disclose that such an assumption was exactly opposed to the facts. He said he believed such a check of the files would show he had criticized the majors more often than any other group in the industry.

Oil Regulation Discussed

"One of the things you've been fighting against," Williams said, "is regulation of the oil industry, either by state or federal governments. Don't you believe that, in the present condition of the industry, some form of regulation is necessary?"

(*Continued on page* 13)

Madison Comment was 'My Own,' Elliott Roosevelt Tells N.P.N.

By LAWRENCE E. SMITH
N. P. N. News Bureau

TULSA, June 24. — Elliott Roosevelt, second son of the President, speaks for himself alone in his Sunday night broadcasts from his Fort Worth radio station. His aim is to discuss and analyze developments in government and business—local and national—as they affect the Southwest, particularly Texas.

This he asserted quite definitely to NATIONAL PETROLEUM NEWS in an interview over long-distance telephone June 24 upon his return from the East where he had attended the wedding of his brother John.

The interview over the telephone was about the broadcast of June 5 when young Roosevelt threw a couple of left hooks at the Department of Justice for its prosecution at Madison of oil men and companies for going ahead with NRA program after that act had been nullified by the U. S. supreme court. He had commented that the oil industry had so continued after the President had urged industry to go on voluntarily.

Young Roosevelt had had considerable discussion with various oil men before making that talk and he was convinced that the oil industry of Texas would have carried on a better balanced program, fair to the small units, had it not been stopped by the prosecution, he told NATIONAL PETROLEUM NEWS.

Explains Madison Talk

"I talked about the Madison trial because if it was not for the oil industry being able to maintain stability and prices the Southwest would be in just as bad fix as other parts of the United States," he said. "This area has been one of the few 'white spots' on the business map of the country, but it is having its problems to meet in continuing the favorable showing. One of those problems is the continued existence of the small units in the industry."

The questioner remarked to Elliott Roosevelt that one of the interesting and intriguing parts of his radio talk was the broadcaster's assertion: "Surely, there is something, somewhere, that can be found which will aid these men and these businesses, which, after all, have formed the backbone of the business enterprises of our nation, from being forced to the wall because of a law which took no special cognizance of the special problems existing throughout the oil industry."

Asked if that statement might indicate that Elliott Roosevelt had a plan, or knew of one that was being formulated to cover the condition to which he called attention, the President's son declined to be specific.

"I have talked to various people in the oil industry who have plans," he said. "I am sure if these people would sit down and work out their plans, then get in touch with the right people in Washington, something could be done.

'Not a Washingtonian'

"I do not want to advise anybody; the oil industry itself knows better how to work it out than I do. I am not a Washingtonian."

The interviewer remarked to Roosevelt that he was now considered a full-fledged Texan, to which he replied, "That is correct."

Roosevelt said that he had had considerable favorable comment on his June 5 broadcast but that he preferred not to discuss the communications he had received.

The station over which he spoke is a small one, one of the two which Roosevelt and his wife own. The other is in Oklahoma City, but does not carry his Sunday night broadcasts which are sponsored by a Fort Worth dairy company.

The June 5 talk apparently was not heard far outside Fort Worth, as the station is low in power and summer reception is not good for even the strong stations far outside their home cities. The Fort Worth Star-Telegram published the remarks in its afternoon edition, circulation of which is confined to Fort Worth and immediate vicinity.

Belatedly, the news got out that young Roosevelt had made some strong statements concerning the Madison prosecutions and the columnists seized upon it and made predictions that Roosevelt, pere, might spank Son Elliott.

The latter has lived in Fort Worth for several years since his marriage to the former Ruth Googins, daughter of a prominent Texas cattleman. Radio has been his major interest, although he has dabbled in West Texas production and is said to have some ownership of producing properties. He is an executive of the Hearst radio enterprises besides operating two stations independently of that connection.

Hints At Plans On Foot

He concluded his talk with N. P. N. by saying:

"I believe there are plans on foot and efforts being made by various members of the oil industry to rectify the position they find themselves in today; whether or not they will be pushed to successful conclusion, I do not know."

* * *

In his Washington column dated June 23, David Lawrence quotes Elliott Roosevelt's remarks criticizing the justice department for prosecuting the oil companies at Madison, adding "Thus Elliott Roosevelt has put his finger on the reason why his own plea for more co-operation between Government and business men does not succeed. One day the Administration promises co-operation and urges it, and the next day the business men are threatened with jail sentences for doing something which another department of the government says is a technical violation of the law."

An editorial in the Detroit FREE PRESS citing Elliott Roosevelt's remarks on Madison, comments, "There isn't any doubt that these last words are a slap at Attorney General Cummings. Whether they are also an admonition to the President, or are an attempt by a son to shift responsibility from the shoulders of a father who seems to him to be a little in the middle, is anybody's guess."

Carburetor Concern Cited

WASHINGTON, June 28.—Hearings before a Federal Trade Commission examiner will begin June 30, at Milwaukee, on the commission's complaint against Vacu-matic Carburetor Co., Wauwatosa, Wis., charging unfair competition in advertising its carburetor attachment.

According to the commission, the company advertised its product would make an automobile go faster and farther on the same amount of gasoline than one not equipped with the device. FTC characterized its claims as "extravagant, deceptive, false and misleading statements."

Gas Bill Signed

WASHINGTON, June 28.—President Roosevelt has signed the Lea natural gas bill, passed by Congress just before adjournment. The new law gives the Federal Power Commission authority to regulate wholesale rates of natural gas sold in interstate commerce.

New Oil Probe By Grand Jury Opens July 12

(*Continued from page* 10)

those among the first receiving subpoenas, first word of the new investigation came from an N.P.N. representative.

However, a few days prior to issuance of the subpoenas reports were heard in the Middle West that Independent jobbers, particularly those selling under their own brand, were vexed by repeated advances is the Oklahoma tank car gasoline market without commensurate advances in tank wagon postings of leading marketing companies.

Reports were that some of the marketers were making charges of concerted activities by some large companies to raise the tank car market, or, as one report had it, "the conspiracy is on again—the buying program has been resumed." Some marketers were said to be aroused to the point of threatening to go to Washington and ask the justice department to reopen the Madison oil investigation.

G-Men Active

While justice department officials would not confirm it, there were indications that some marketers made the trip to Washington as threatened.

Another phase of this same complaint is that heard in Chicago concerning marginal contracts of fuel oil distributors and the relation between the tank car and tank wagon price. Justice department G-Men have been digging around on this for some time.

Tangled in the maze of rumors which followed disclosure of the impending grand jury inquiry was mention of a mysterious association with a name as long as a negro lodge —"The Ethyl Dealers Association for Co-operation with Independent Refiners." Several people had heard reports of this organization but no one could be found who knew anything about it.

Piecing together what fragments could be picked up, it seems that this association supposedly was formed in Tulsa early in June as a buying or selling agency and that some refiners were buying through this association from other re-

Purpose of Madison Probe Puzzles

(*Continued from page* 11)
finers and allegedly paying a price higher than the going market.

But no one could be found among a score or more of jobbers, refiners and company executives contacted who had ever heard of it. The several persons—outside of the original sources of the reports—who had heard of it could not place where the rumor had come from or recall any details.

The suggestion that it might be a selling agency for refiners prompted inquiry among persons prominent in discussions of plans for a central selling agency which was suggested last winter. But this brought replies that this plan has been dormant for several months.

Speculation Rife

Needless to say the new grand jury probe, coming with the suddenness of a thunderbolt, caused much speculation among the industry.

At first glance, it was thought that the purpose of the grand jury subpoenas was to develop more evidence to be used against the defendants in the jobber-contract indictment—not pleading *nolo*—who are to be brought to trial in September. But developments at Washington the last two days have confirmed the opinion that the probe will go further than jobber contracts.

The justice department may have been persuaded that inter-refinery buying—and there has been some instances of this, as reported in trade publications in recent weeks—was a renewal of "program buying" as charged in the indictment on which a number of companies and individuals were convicted last winter, instead of open-market purchases because the buying company actually needed the gasoline.

It is well-known that some Administration officials at Washington—and certainly those in the justice department—were quite chagrined at public reaction, as evidenced by newspaper comment, to the Madison oil convictions. A new indictment, based on allegations of "program buying" *since* Dec. 23, 1936, of course, would not meet with the so-called NRA defense. And it was statements that the defendants were "prosecuted for what they did under the NRA at the government's insistence" which have particularly angered the justice department.

Convening of the grand jury for the new oil probe coincides—intentionally or not—with the psychological moment when the court at Madison would be about to rule on motions in the tank car or "buying program" case.

Judge Stone may or may not grant motions to set aside convictions of some defendants in the tank car case. Should he free some of them of the guilty verdict returned by the jury last January, it is possible to have this picture:

A company official, fresh from the grand jury room where he presumably was questioned about activities of his or some other company, allegedly in violation of anti-trust laws, coming before the bench and having his conviction in the other case set aside.

Or, later, a defendant, freed of a guilty verdict by the court, subsequently indicted on charges similar to those on which he had been previously tried.

That is placing considerable responsibility on the Madison court in its weighing of the motions to set aside the tank car case convictions—to free an individual and maybe shortly afterwards find him indicted again. Some might say that the whole situation, precipitated by convening of the grand jury just prior to the expected rulings, verged on a "threat" to the court.

Jobber In Nutcracker

When the jobber complains that he "is in a nutcracker" he means that he is being pinched between relatively high prices at which he buys and relatively low prices at which he must sell to compete with his major-company competitors.

That is the situation confronting many jobbers in the Middle West today—especially those marketers who have no marginal protection contracts with their suppliers as do many jobbers selling branded products.

The past several months have witnessed the anomaly of a soggy retail price structure prevailing in many sections of Standard of Indiana territory in the face of repeated advances in the tank car market on which contracts of the Independent marketer are generally based.

Many factors have contributed to the present condition of retail prices, with price wars and subnormal price areas scattered through the Middle West—but they are all summed up by some observers with the statement that the Dealer Plan of Marketing has broken down.

Dealers Miss The Boat

It was suggested that there might have been some justification for low retail prices early last winter, when crude prices were wavering, gasoline inventories piling up higher and higher. But the crude situation righted itself, inventories were cut by refinery shutdowns and surprisingly well-sustained consumer demand. Major companies and others, with refineries closed, may have found it cheaper to buy the other fellow's "below-cost" gasoline instead of drawing on higher-valued inventories or starting up their refineries. The tank car market firmed and prices began to climb.

Dealers generally, it was contended, failed to recognize the signs and didn't advance their retail prices as indications of higher tank car prices made themselves apparent through the spring. On the contrary the dealers seemed to vie with each other in a race to see how much of their profit they could give away.

Failure of the dealer to assume the responsibilities of maintaining retail prices which would give them a fair margin at then-existing prices—much less advance their prices—when signs pointed to a strengthening in the general price structure—brought about widespread depressed areas. A new factor, inciting dealers to greater efforts to "meet competition" during recent months, was the greatly increased number of unbranded marketers selling leaded gasolines.

The Other Jaw

This situation is set forth as premises for the conclusion that if the relatively high tank car price is one jaw of the nutcracker currently squeezing the jobber the other jaw may be failure of the Dealer Plan of Marketing with consequent softness in retail prices weighting down the tank wagon price.

There is an exception to this line of reasoning which, however, doesn't disprove it but further explains some of the factors involved. And that is the fact that the mid-western tank car market, which is made up largely of sales by brokers and other resellers in the Chicago area, has lagged behind the advances in the Oklahoma refinery market.

N. J. Will Ban Obsolete Pumps

TRENTON, N. J., June 27.—The Department of Weights and Measures in New Jersey has announced that, effective July 1, 1938, all gasoline dispensing equipment which contains "nutating, or wobble disc, meters" shall be considered obsolete in that state. The ruling is covered in Regulation No. 20 issued by the department, and provides a penalty for each violation of not less than $25.

In announcing the regulation, the department made the following comment:

"The necessity for this regulation has become more pronounced with the passage of time, as wobble disc meters do not lend themselves to sustained accuracy in the delivery of gasoline to motor vehicles, with a consequence that either the buyer or the seller suffer losses through the use of equipment incorporating such meters in their construction. Pumps so equipped are generally of a type that antedate the use of air eliminators, and accuracy in deliveries is materially affected by variations in speed."

It is pointed out that the non-retroactive feature of the ruling should bring about a gradual elimination of the objectionable pumps without undue hardship on anyone, and hope was expressed that these pumps would soon be totally eliminated "without resort to more drastic stipulations".

Following is the content of Regulation No. 20:

"1. On or after July 1st, 1938, all gasoline dispensing pumps equipped with nutating, or wobble-disc, meters shall be considered obsolete in the State of New Jersey.

"2. The provisions of this Regulation shall not be retroactive. Such pumps already on installation may remain in service provided they can be maintained to deliver accurately within prescribed tolerances; otherwise, they shall be removed from service.

"3. Such pumps removed for any cause whatsoever, shall not be reinstalled on their original location nor on any other location, nor shall any new or used pumps of the obsolete type referred to be installed on any new or old location in this State subsequent to the effective date of this regulation.

"4. The penalty for each violation of this regulation shall be not less than $25.00, as provided by section 51:1-89, Title 51 of the Revised Statutes of New Jersey."

Platt Discusses Policies of N. P. N.

(*Continued from page* 10)

"Absolutely not," Platt vehemently replied.

The publisher then presented the committee with copies of his speech, made at Pittsburgh June 17 at the meeting of the Pennsylvania Grade Crude Oil Assn., (N.P.N., June 22, p. 40) in which he decried the "legislative menace to competition and freedown of management in oil and all business."

Platt said that it was his belief that the chief result from government regulation would be the destruction of competition, adding that, while there might be some form of control which might be necessary, "I can't think of any now."

Williams asked if Platt didn't think some sort of regulation was necessary to protect the small dealer, and Platt asked him what it would be.

One of the suggestions was a grading law. Platt declared it would not only be harmful to the consumer, because it would put a stop to competitive efforts at improving the grade of motor fuel, there was no need for it.

What little bad gasoline that has come on the market from time to time, Platt insisted, has not only been a very small proportion of the total amount, but has quickly been found out and wiped out.

Pursuing the "regulation" theme, Platt said that too often political machines were built up behind the pretense of regulation, not only in the oil industry but in others.

Licensing Stations

State laws to prevent overcrowding of retail gasoline outlets, which, Williams said he believed, would eventually result in a higher price for gasoline to the consumer, also were discussed.

Platt said he believed governments should "welcome" advent of new service stations, as the life-blood of competition.

The witness said that probably lawyers, doctors, printers, and retailers in every branch believed their professions and businesses were overcrowded, but that regulation would only cut down the competitive element.

Regulatory steps would eventually lead to downright government control, Platt said—Fascist instead of democratic government, he added.

Ehrlich said he agreed "to some extent" with the witness, as to not favoring government "domination," but added that he believed "mild regulation" necessary.

The attitude of the committee toward the gasoline industry was reflected in a question by Ehrlich, who asked if Platt saw any difference between gasoline and gas, electricity and other public utilities.

Platt answered that the "public utilities" mentioned were such because they had been granted government monopolies in their particular localities, and hence were subject to government regulation.

Advertising Taken Up

After the discussion of Platt's views on regulation, Williams picked copies of N.P.N. from a file he had at hand and questioned the publisher as to the advertising in his publication.

Various individual advertisements were referred to, and questions asked as to whether the advertisers were subsidiaries of, or in any way connected with, major oil companies. When Williams had gone through a number of such advertisements, he asked Platt approximately what percentage of his paper's income came from major companies.

"About 7 or 8 per cent," was the reply.

Then he was asked about the percentage of advertising in N.P.N. which came from companies selling equipment to retail stations, and said it amounted to "less than 20 per cent."

"Don't you think," Williams asked, "that the fact that many of your advertisements are from manufacturers selling to retail stations might influence your opinion of whether stations should be licensed or otherwise curbed?"

"That depends upon how honest you think I am," Platt retorted. "I think I am honest in my own convictions." Platt pointed out that his publication is a member of the Associated Business Papers, Inc., and said that no reputable editorial department caters to advertisers.

Asked about the number of "independents" who advertise in his publication, Platt pointed to two such advertisements in one issue, adding that the percentage of such advertisers had been much higher before a number of independent refiners had had to close down because of present economic conditions.

Williams told Platt that his attitude, as expressed on the stand and in his editorials "coincides more nearly with the heads of major companies" the committee has questioned than with any other witnesses.

Platt told him that if he'd go around through the country he would find a great many people, not the heads of major companies, who agree with his philosophy.

He added that the opinions he had expressed at the hearing and in his editorials, some of which have derided state regulatory bodies, "have been my own," and added, "I can print what I please, so long as this is the United States." If the regulatory laws which the many "investigating" bodies want to put into effect are passed, however, "it will no longer be the United States," he said.

Consumer Questions Asked

Ehrlich and Williams asked Platt if his publications ever "considered the consumer."

The answer was that "we always consider the consumer." Platt said that the object of NATIONAL PETROLEUM NEWS, as of all reputable trade papers, was to improve the efficiency of the industry which they represent, and that improvement of the industry is for the benefit of the consumer.

Near the close of the Platt testimony, Maurice F. Hanning, Cleveland, counsel for Platt, read back to Ehrlich his statement in the speech before Bensky's organization concerning trade papers, and asked if he meant N.P.N.

Ehrlich replied that at the time he made the statement he felt justified, because he had found little sympathy with independents or consumer problems from reading the publication's editorials. Ehrlich added, however, that:

"I think you're honest in your convictions."

The fact that the Platt editorials have at times disagreed with his committee and the purpose of investigating committees generally, Ehrlich said, made him "respect you the more" because Platt "came out and said it."

At the request of Hanning, Platt sketched the history of NATIONAL PETROLEUM NEWS since he first established it in 1909 when he joined the battle of a number of independent oil men who were fighting Standard Oil Co.

Built Up Association

He told of how he had been elected secretary of an association of independent jobbers, and had built that association up over a period of years, always fighting their battles in his publication.

He said that the major part of his publication's subscribers are jobbers, and without them its circulation would be much smaller than at present. He added that all his subscriptions were paid subscriptions.

It was at this point that Hanning asked Ehrlich if he believed NATIONAL PETROLEUM NEWS to be subsidized, and the chairman said that he had no such evidence. However, he added, he believed Platt, like any other human, was biased in his opinions by his own interests.

At the close of the "frank" session, both Ehrlich and Williams thanked Platt for appearing, and said he had been very co-operative. The indication was that while opinions on opposite sides of the table were at wide variance, personal feeling was absent.

Ehrlich said no more hearings of the committee will be held before September.

Inness-Brown Attacks Ehrlich Committee

N. P. N. News Bureau

NEW YORK, June 25.—Investigation of oil trade papers by the New York Joint Legislative Committee to Investigate the Petroleum Industry was assailed by H. A. Inness-Brown, publisher of "The Gasoline Retailer," in a statement issued to the newspapers following the first day's hearing.

Inness-Brown denied that an investigation of trade publications was within scope of the legislative authority conferred on the oil probe group, of which Harold B. Ehrlich, Buffalo assemblyman, is chairman. He vigorously attacked the "secrecy" of the first day's hearing. He said that the committee's actions were an attempt to "intimidate trade publications."

Taking up Ehrlich's statement that "trade publications were subsidized by major oil companies," Inness-Brown said, "We unqualifiedly state that The Gasoline Retailer has not been and is not now subsidized by any oil company or any other company."

National Petroleum News

Copyright 1938 by The National Petroleum Publishing Co.
Trade Mark Registered U. S. Patent Office.

Published every Wednesday by The National Petroleum Publishing Co.

Warren C. Platt, *Editor and Publisher*
V. B. Guthrie, *Managing Editor*

FOUNDED 1909
Member of Audit Bureau of Circulation and Associated Business Papers, Inc.

Publication office: 1213 W. Third Street, Cleveland, O.
Telephone, CHerry 7672 Cable Address, Plattoil, Cleveland

NEWS BUREAUS

New York, 50 W. 50th Street, Telephone, COlumbus 5-1516 and 5-1517.
Chicago, Buckingham Bldg., 59 E. Van Buren Street, Telephone, Harrison 5901-2-3.
Washington, D. C., 1002 National Press Bldg., Telephone, NAtional 0654.
Tulsa, Okla., 904 World Bldg., Telephone, 3-7132.
Los Angeles, 610-A Hillstreet Bldg., 815 South Hill Street, Telephone, VAndike 2845.

Subscription rate $3 per year in United States and Mexico; $4 in Canada; $4.50 Foreign Countries. Current copies 10 cents, except special issues; back copies more than two months old 20 cents per copy.

Builds on American Principles Without Government as Wet-Nurse

By WARREN C. PLATT, Editor

In noting the celebration of the fifteenth year of the Pennsylvania Grade Crude Oil Association, emphasis should be laid on the outstanding American principle that the association's activities and achievements represent, namely, that its members wonderfully improved their own condition without appealing to government to wet-nurse them.

In these days, when so many business men and individuals, including many big and little in the oil business, are running wildly to government to help them solve their commercial problems, the record of the Pennsylvania association is most outstanding. American business men the country over might well give it a cheer.

The association held its annual meeting at Pittsburgh the other week and President Clinger (re-elected) remarked on what the association had done; but he did not say enough.

When the association was organized in 1923 the Pennsylvania producing and refining industry was very sick. It had been through many troubles that threatened its extinction many times before but in 1923 it looked as if it was finally done for. Tremendous quantities of good crude oil were being found, produced and transported cheaply to market centers with ever increasing efficiency.

Pennsylvania oil men and the country recognized the great excellence of Pennsylvania lubricating oil but, because of the small size of the Pennsylvania wells, that crude oil cost many times more to produce than the new competing crudes. Even with Pennsylvania producers suffering losses, the refiners had to pay twice and three times as much for Pennsylvania crude.

To add to their burden "anti-knock" gasoline came on the market about then and Pennsylvania gasoline, while of good gravity and otherwise quite exemplary, knocked so badly it could not be marketed in competition with gasolines from the newer crudes on any competitive price basis. Fuel oil also had to be sold at a low price in competition with the fuels from the cheaper crudes. All these burdens had to be borne by one product, lubricating oil.

Pennsylvania oil men did not go to the state legislature and demand that a barrier be erected around the state barring all petroleum products from other states until Pennsylvania motorists had absorbed Pennsylvania's products at a good price. This was about the first "remedy" that some Michigan oil men sought when their new fields began to destroy market prices and it is the fight that some Illinois interests are now making.

Pennsylvania oil men instead tried to build more soundly and in a way that would leave them in full control of their businesses, instead of turning them over to government. They decided on a co-operative sales campaign behind their best known product, quality lubricating oil. The campaign had its many ups and downs. Members soon found that they had to do far more than contribute to an advertising campaign to put their trade name in the magazines, that they had to build sales organizations, teach jobbers and dealers how to market the product and then see that the "free riders" and "price cutters" did not destroy what they were trying to build up.

But what was even more important than all this, they had to make a still better product and do it at lower cost. Years of co-operative research followed, with a steady improvement in refining methods and in product. The product had to prove its own high price in the ever more exacting demands that engines were making on motor oils.

As the oil became more valuable through improvement and better marketing, it became more necessary to protect it against substitution. From that came the selling of motor oil in cans.

The outcome of the whole effort was that, in the intervening 15 years, while consumption of motor fuel increased 175 per cent, production and consumption of Pennsylvania crude oil increased roughly 125 per cent despite the handicap of more than twice the price, despite the handicap of having to carry the load of higher cost products and a considerable amount of undesirable gasoline which, for a long time, cost almost too much to crack and too much to "lead" and at the same time had to be sold on a competitive price against the inexpensive and good gasolines brought around by water and pipeline to the heart of the natural Pennsylvania market. And all these years the Pennsylvania industry has prospered, on the whole.

That we submit, is a considerable accomplishment, especially as it was done by small companies, in co-operation, and without the aid of government subsidy or favoring legislation. Nor was the Pennsylvania Grade movement always helped by the price and marketing policies of some of its own members, who allowed supplies to get on the market to be sold on a price basis against the higher prices the whole movement needed in order to survive.

Today the Pennsylvania Grade movement is having more troubles, due to producers and refiners not adjusting themselves quickly enough to the present depression, due to their getting too ambitious as to the amount of Pennsylvania oil the markets will absorb at the necessary price; due to too much price sniping among Pennsylvania refiners and distributors. And in large measure due to the Pennsylvania producer having closed his eyes to these difficulties and thinking there is something in the Constitution that says that the public shall consume all the crude that he can possibly produce at an exceedingly profitable price. In that, he is no different than most other oil producers.

So, with all its trials and tribulations, we ask the oil industry to look at the success of this Pennsylvania Grade Crude Oil Association, and to see it as we see it who have watched it grow and get sick and grow some more—a success built on plain common sense, established on sound business policies and firmly placed on the first principle on which this country was founded; that American business men shall build themselves and their nation by their own free acts and on their own initiative.

The whole oil industry and all America's business men should be proud of the achievements of this group of oil men, descended from the pioneers of the industry. Perhaps there is something in the fact and the spirit that these men came from the pioneers and that they are pumping the oil from the wells drilled by the pioneers through refineries that, even in name and in corporate entity, in some cases, are those of these same pioneers.

From a GEOLOGIST'S PORTABLE

L. G. Huntley, of Huntley & Huntley, Pittsburgh, internationally known geologist, has been a contributor to National Petroleum News for a number of years, writing occasionally of his experiences and observations in many strange lands. For the past year or so circumstances have confined Huntley's travels to this country. Readers will find, however, that the shortened radius of travel has not detracted from the piquancy of his comment on some of the things he has heard and seen in the U. S. A.

By L. G. HUNTLEY

Dear Editor:

Well, Roosevelt's most recent depression, plus the various wars around the place, have kept me at home most of the past year. The recent developments in Mexico spoiled a nice little job upon which I was counting. However, companies are still suing one another, and the New Deal is still trying to collect more taxes, as a by-product of which efforts I am still eating.

In wandering up and down in our own country, I find the natives here keep me amused equally as well as those without pants or radios. I was looking over a lease map the other day, and found a farmer named Golden Toothman. I wondered if he had been born with it and if it ran in the family. Which reminds me that while I was amusing myself or being amused at John's Rendezvous in San Francisco, I thought for a while I was making a hit with one of the entertainers. But a front pivot tooth had come loose that day, and at embarrassing moments in the conversation it would drop out. The lady looked startled the first time, and then it seemed to get monotonous, so I lost out.

But, speaking of names, I am constantly astonished at the subtle ways in which we Americanize people of various racial stocks. I ran across a large family in one of the oil fields named Stufflebean. I couldn't seem to reconcile this with any of the common origins such as place names like my own, quality names like Black, White, Short, etc., or occupation names. A little research showed that this name had originally been Stauffelbein, meaning stumble-leg, or lame man. And of course there is the old aristocratic family of Warmcastle whose name was originally Warmkessel, or Hot Pot. And the famous name of Negley, corrupted from the Swiss German name of Nagle or Tack. Well, let it go.

Finds Hotel Strike

My visit to San Francisco coincided with the hotel strike. I was forced to stop at a little third rate place which still remained open. I had occasion to call on a friend who continued to defy the world in one of the great apartment hotels. I ran the gauntlet of the pickets, and behind the barricades found a little remnant of guests and bell boys gathered in the darkening lobby playing shuffleboard. The $10,000 per year manager ran me up to the fifteenth floor.

In Tulsa a few months ago, I was coming down to the street in a crowded elevator. We stopped at the tenth floor, and just as the door opened a smartly dressed girl jumped out, whirled, and slapped the young fellow just in front of me a vicious one in the face, saying something which I did not catch, just as the door closed. The young man seemed startled and looked inquiringly at the operator, who also looked puzzled.

An exchange of "What the hell!" with, "I never saw that one before", didn't seem to clear the situation much, when a Western Union boy who hitherto had not been noticed spoke up and said he thought he knew the answer. It seems the young lady had been standing on his more tired foot, and resisted all efforts and hints to get off. Finally, in desperation he had pinched her in the most obvious place, with the aforesaid results, the wrong man slapped as sometimes happens.

Adventure With Zipper

Did you ever stop to think of the dangers of some of the newer products of industry, such as zippers? The whole town was talking last week about a contretemps which took place in the upper social circles. One of our leading citizens had taken his wife to the theater after dining heavily. His tailor had affixed one of these little gadgets to his trousers, and as increasing age and girth, plus the heavy dinner, were making him uncomfortable in the restricted chair, he thought he would ease it a bit by pulling the little metal tab down two or three inches from the waist line.

He was almost asleep when two late arrivals crowded by to their seats in the middle of the row. The arriving lady had some floating draperies which as bad luck would have it caught in the aforementioned zipper, and refused to come loose. It was probably an imported gown, for she was reluctant to tear it, and the joint efforts were finally resumed out in the aisle. The diabolical contraption refused to let go, even with the aid of a couple of ushers. Either of the two obvious refuges were of course out of the question, so a retreat was made to the manager's office, where the dress was finally torn loose. One of the papers the next day carried veiled references to the incident without names.

Ode to Visiting

A friend of mine showed up hollow-eyed the other day. He had a lot of relatives at his house. It is used as a base for visiting firemen and ministers with their wives and children. Then when the word gets around in the family, the rest of them show up in order to see the first arrivals. He was in the midst of a rush job which had kept him busy for some weeks, so when a wire arrived as to the impending arrival of a bride and groom in-law on a train arriving at 1:30 at night, he just turned in and said; "Let them come in a taxi, or else you meet them".

So his wife met the train. Their children were all in bed, the two dogs were in the basement tied in opposite corners, and everything was peaceable when the bride and groom arrived with a new dog. The canine home-guard scented trouble and started to raise a rumpus, so to placate them they were untied. A three-cornered dog fight in the living room brought down most of the bric-a-brac and all the kids. Grandpa and grandma showed up in night dress. There were three Covenanter ministers in the aggregation with their wives and children. After it was all over my friend had to listen to a domestic lecture upon the use of that kind of language. The bride and groom turned in with one dog tied to the bed-post. My friend is figuring upon finishing the report with a downtown hotel as headquarters.

The repression is getting worse. We have had a couple of rubber checks recently, and some plain touches for carfare from old friends on their way back to Oklahoma from New York, where they were trying to promote leases or royalties or such.

J. E. Crosbie Dies

TULSA, June 25.—John E. Crosbie, 76, internationally known oil man and banker, died June 21 at his home in Tulsa. He had been ill for about three months.

Born in Petrolia, Ontario, center of Canada's early oil development, Crosbie worked as a tool dresser and driller in the shallow fields of Ontario. Like hundreds of others who learned their trade in the Petrolia field and went out to distant places in the British Empire, Crosbie left Canada in 1898 under four-year contract to Sumatra, Dutch East Indies. While there he supervised the building of the first refinery and the first pipeline system on the island.

He came to the United States when his contract time had ended and operated in Spindletop and other fields of south Texas. Discovery of Glenn Pool, brought him to Tulsa in 1908, where he had lived in Tulsa since that time. He became president of the Central National Bank in 1908 and at the time of his death he was a director of the National Bank of Tulsa, whose predecessor, Exchange National Bank, asborbed the Central some years ago.

He has been as well known among horse breeders as among oil men. On his farm near Tulsa there is a fine half-mile track and the Crosbie colors have been carried from there to races and shows for the past quarter of a century.

He is survived by six daughters, three of whom are married to Tulsa oil men, Cyrus H. Sweet, vice-president of the National Bank of Tulsa and secretary-treasurer of J. E. Crosbie, Inc.; Walter B. Moran, vice-president of J. E. Crosbie, Inc. and Robert B. Warren, Jr., president of Warren & Robinson, drilling contractors. The other daughters are Mrs. J. A. Porter and Mrs. Lulu Egan, of Tulsa, and Mrs. F. G. Saint, West Point, N. Y. Another daughter died some years ago. Mrs. J. E. Crosbie died in 1930.

Bureau of Mines Forecasts Less Crude Demand in July

N. P. N. News Bureau

WASHINGTON, June 27.—Bureau of Mines estimates daily average supply of domestic crude oil to meet market demand in July at 3,398,100 barrels, an increase of 64,800 barrels over the June estimate but five per cent under July last year.

The "industry forecast" for July, issued as a supplement to the Bureau's forecast for the first time this month, estimates daily average supply at 3,448,000 barrels, almost 50,000 barrels above the Bureau's forecast.

Estimated domestic motor fuel demand for the month is set by the Bureau at 49,930,000 barrels, or 1.5 per cent lower than the actual demand for July last year. The Bureau's estimate for June domestic demand was 48,100,000 barrels.

Stocks of finished gasoline will decline 6,600,000 barrels during July, the Bureau estimates. This is 50,000 barrels more than the estimated decrease in stocks for June, and 1,600,000 more than the actual decrease in gasoline stocks last July.

Stock Near '37 Level

If declines forecast for June and July prove correct, stocks on July 31 will stand at 73,350,000 barrels. On July 31, 1937, gasoline stocks were reported as 70,000,000 barrels.

Exports of motor fuel during July are estimated at 4,000,000 barrels, bringing total forecast demand to 53,930,000 barrels. Subtracting the 6,600,000 estimated withdrawal from stocks from this figure, leaves 47,330,000 barrels.

Benzol and "direct" sales and losses of natural gasoline have been estimated as 900,000 barrels, making the estimated refinery production 46,430,000 barrels. This is distributed among the various refining districts as follows:

East Coast	6,510,000
Appalachian	1,610,000
Indiana-Illinois	8,310,000
Oklahoma	2,250,000
Kansas-Missouri	2,510,000
Inland Texas	3,470,000
Texas Gulf Coast	11,830,000
Louisiana Gulf Coast	1,450,000
North Louisiana-Arkansas	960,000
Rocky Mountain	1,150,000
California	6,110,000
Total	46,430,000

More Natural Used

Citing figures to show an increased utilization of natural gasoline, the Bureau estimates that the proportion of natural gasoline to be used in July will be 7 per cent of the total, compared with 6.2 in July last year. This amounts to 3,250,000 barrels in July this year as compared with 2,981,000 in July last year.

This brings the estimated production of straight-run and cracked gasoline for July down to 43,180,000 barrels, compared with 45,290,000 in July last year.

Estimating the yield of straight-run and cracked gasoline at 44.0 per cent, compared with an actual yield of 43.22 per cent in July last year and 44.56 per cent in July 1936, the Bureau, by application of this yield to the refinery-production estimate, arrives at refinery crude-oil requirements of 98,140,000 barrels, or 3,165,800 barrels daily.

Runs of foreign crude to stills are estimated at 2,400,000 barrels, 200,000 barrels more than the June estimate, and estimated crude oil exports have been increased 1,100,000 barrels over the June estimate, to 7,100,000 barrels.

This gives the daily estimated demand for domestic crude oil of 3,398,100 barrels. The Bureau cautions, however, that "as demand may be supplied either from stocks or from new production, contemplated withdrawals from crude oil stocks must be deducted from the Bureau's estimate of demand to determine the amount of new crude to be produced.

The estimated daily average demand for crude oil, by states, follows:

State	Forecast July	Forecast June	Actual prod'n April
Texas	1,360,300	1,329,300	1,350,000
Calif.	642,300	650,000	721,600
Okla.	518,400	508,300	504,600
La.	260,600	250,000	257,300
Kansas.	172,300	172,300	170,100
N. Mex.	112,900	108,300	97,500
Mich.	56,400	54,000	55,300
Wyo.	55,500	49,700	48,900
Penn.	52,800	53,400	49,900
Ark.	51,000	48,300	52,500
Illinois.	45,500	41,700	46,300
N. York	15,000	14,700	14,300
Ky.	14,500	14,000	14,400
Mont.	13,500	12,700	13,700
W. Va.	10,000	10,500	10,600
Ohio	9,700	8,800	9,100
Colo.	5,200	5,000	4,400
Ind.	2,200	2,300	2,400
	3,398,100	3,333,300	3,423,400

Is Pennsylvania "Safe" Driving Law Affecting Travel?

N. P. N. News Bureau

CLEVELAND, June 27.—Pennsylvania is enforcing to a fraction of a mile a maximum 50-miles an hour speed law and it is attracting considerable adverse comment as a result.

Automobile clubs are receiving protests at the way they have been treated by Pennsylvania state troopers when they have gone a few miles over the 50-mile an hour limit and even citizens of the state are complaining. There are long stretches of road in Pennsylvania that have few inhabitants on them, where the traffic is very light and 60 or even 70 or 75 miles an hour to the average man would seem entirely safe. Yet a state trooper is apt to bob out from behind some shelter and nab you if you get over 50 miles an hour.

The result has been to increase considerably the traveling time in the state. Some residents of the state say they don't drive any more than is necessary but use the trains, because of the time driving takes, due to this 50-miles-an-hour law. Motorists from outside of the state have been heard to swear they will avoid it.

If there is any particular amount of this criticism, there must be some reflection of it in the volume of gasoline being sold in the state. It would be very difficult to draw any particular conclusions from the total gasoline gallonage figures by months in the state. Furthermore, this summer the figures would be confused by the big industrial shutdowns applying to so much of Pennsylvania.

However, it may be that some of our readers, particularly on through highways, have some information from their own gallonage which would show whether or not this rigid enforcement of the 50-mile-an-hour driving law is affecting gallonage adversely. If so, will they please send that information to us? Perhaps after we get into it, we can devise an investigation which may give us some worthwhile facts. Of course, as the oil industry loses gallonage, Pennsylvania loses tax money.

Address your replies to the Editorial Department, National Petroleum News, Cleveland.

1938 Oil Exports Show Large Gain

N. P. N. News Bureau

WASHINGTON, June 27.—United States exports of petroleum and products during the first five months of 1938 were more than 18 per cent above those for the same period last year, according to the Bureau of Foreign and Domestic Commerce.

Exports for the five-month period were valued at $162,100,000, compared with $136,800,000 in the same period of 1937.

At the same time, the Bureau reports that imports of petroleum and products during the five-month period this year were valued at $16,800,000, approximately the same figure as the imports reached in the 1937 period.

Crude petroleum exports accounted for $48,183,000 of the total during the five month period, as against $31,200,000 last year. In barrels, the 1938 exports amounted to 32,753,000 compared with 22,262,000 last year.

Gasoline exports during the five-month period this year were valued at $40,223,000, compared with $29,081,000 during the comparable period of 1937. Lubricating oil exports this year were valued at $29,457,000, a decrease from last year's five month figure of $35,760,000.

Gas and fuel oil exports increased in value from $19,876,000 in the first five-months of last year to $23,723,000 in the same period of 1938, the figures show.

Socony-Vacuum Sets N. J. Minimum Price

N. P. N. News Bureau

NEW YORK, June 27.—Socony-Vacuum Oil Co., has joined the list of major companies specifying minimum prices at which their branded gasolines must be sold at retail in New Jersey, as provided in the state's fair trade act. An official of the company today said that the task of revising contracts with its dealers throughout the state had been completed, and a price of 15.9c, including 4c tax, had been established as the minimum at which "Mobilgas" (regular) gasoline could be sold in the state. This is the same as the minimum price specified for regular grade motor fuel by the Standard Oil Co. of New Jersey.

Summer 'Gas' Demand to Top '37, Economists Say

Bureau of Mines Polls Oil Economists And Averages Their Demand Estimates

N. P. N. News Bureau

WASHINGTON, June 27.—Bureau of Mines included with its July forecast of motor fuel and crude oil demand a summary of industry estimates of demand for the month, along with estimates the entire third quarter.

Various interests within the industry have long sought "long range" forecasts of demand, but the Bureau has declined to issue them on its own.

Recently, however, it decided to gather quarterly estimates from industry associations, oil companies, and petroleum economists outside the government, average such estimates, and issue the averages, but without the Bureau taking any responsibility.

Last month it asked representatives of these groups to submit their estimates, received a dozen replies, and averaged the nine which were complete enough to furnish comparative figures.

An interesting observation in comparison with the Bureau's figures with those of the industry is that, while the Bureau has often been criticized for placing its estimates of crude demand too high, the industry forecast for July is about 50,000 barrels daily above the Bureau's.

Bureau said in issuing the "supplement" to its July forecast that it had not determined whether such a practice will be continued, although most of those from whom replies were received indicated a willingness to co-operate in the future if such quarterly forecasts prove to be of interest and value to the industry.

Supplement was issued with the statement:

"It should be noted that this forecast represents a composite of industry opinion and does not include any estimates by the Bureau. The Bureau's current July forecast was completed before the industry forecasts were examined and compiled."

The tabulation made by the Bureau of averages of industry estimates is shown in table 1.

"The average estimated total demand for motor fuel of 159.6 million barrels represents an increase of about one half per cent over the third quarter of 1937," the Bureau said in analyzing the estimates. "A considerable diversity of opinion was shown in the estimates of motor fuel demand, domestic demand ranging from 145.9 million barrels to 151.2 million, exports from 9.4 million to 14.1 million, and total demand from 157.0 million to 162.9 million.

"Estimates of desirable reductions in stocks of finished and unfinished gasoline by September 30 also showed considerable variance. Using the Bureau of Mines' figures of 90.1 million barrels for April 30 as a base, the average estimate received for reductions in May and June was 8.7 million barrels, indicating stocks of 81.4 million as of July 1. On the assumption that such liquidation would occur, the average further reduction for the third quarter was 16.4 million barrels, indicating total stocks of 65.0 million as the average objective for September 30. In the individual forecasts, this objective varied from 62 million barrels to 68 million, with several comments that a level as low as 60 million would be desirable.

"The average estimated yield of gasoline from crude for the quarter was 44.1 per cent, but with a variance from 43.5 per cent to 44.8 per cent. The average estimate of total crude runs required was approximately 19 million barrels less for the quarter than in 1937. In the event of such reduction, much higher yields than normal for distillate fuel oils and some other products will be necessary at the expense of the residual fuel yield.

"The total market demand for domestic crude will be affected materially by the trend of crude exports. Uncertainty in this respect was indicated by a variation in estimates for the quarter ranging from 18 million barrels to 30 million.

"It is of further interest to note that the quarterly average of the four most conservative forecasts received indicated a total motor fuel demand of 158.4 million barrels, an average yield of 44.05 per cent, a gasoline stock reduction for the quarter of 18.1 million barrels average daily runs of 3,162,000 barrels, total crude exports of 21.1 million barrels, and an average daily market demand for crude of 3,407,000 barrels.

"It was suggested that separate forecasts for California and East of California might be useful. As only a few such estimates were received, they are not properly comparable with the average national totals. However, such estimates as were received for California for the third quarter indicate a reasonably attainable gasoline stock reduction of 2.3 million barrels, daily average crude runs of about 550,000 barrels, and a daily average market demand for crude of 640,000 barrels.

"It should be definitely understood that this forecast represents market demand for crude and does not forecast required production. In several forecasts it was indicated that further substantial reductions in crude stocks would be desirable."

Summer Gasoline Demand Will Top '37

WASHINGTON, June 27.—Domestic gasoline demand this summer not only will keep pace with the record-breaking consumption of 1937 but will top it slightly. That was the concensus of a group of petroleum economists polled by the Bureau of Mines, whose estimates of demand for the July-August-September quarter averaged 148,370,000 barrels as against 147,550,000 barrels for the same three-month period of 1937.

Table 1

Bureau of Mines Analysis of Oil Industry Forecast

(Thousands of barrels)

	Forecast July 1938	Forecast August 1938	Forecast September 1938	Forecast Third Quarter 1938	Actual Third Quarter 1937
Domestic Demand for Motor Fuel:					
Domestic demand	50,440	50,720	47,210	148,370	147,550
Exports	3,770	3,690	3,790	11,250	11,190
	54,210	54,410	51,000	159,620	158,740
Supply of Motor Fuel:					
Straight-run and cracked gasoline production	43,800	44,000	42,370	130,170	135,770
Natural gasoline used at refineries	3,140	3,480	3,830	10,450	11,030
Total refinery production	46,940	47,480	46,200	140,620	146,800
Benzol and other natural gasoline	870	870	880	2,620	2,370
Decrease in gasoline stocks	6,400	6,060	3,920	16,380	9,570
Available supply	54,210	54,410	51,000	159,620	158,740
Crude-Oil Requirements:					
Per cent yield of gasoline from crude	44.13	44.20	44.06	44.13	43.30
Refinery crude required	99,250	99,550	96,160	294,960	313,530
Daily average	3,202	3,211	3,205	3,206	3,408
Foreign crude runs	2,520	2,510	2,370	7,400	7,800
Domestic crude runs	96,730	97,040	93,790	287,560	305,730
Exports	7,270	7,510	7,060	21,840	20,390
Fuel and losses	2,900	2,910	2,800	8,610	9,380
Total demand for domestic crude	106,900	107,460	103,650	318,010	335,500
Daily average	3,448	3,466	3,455	3,457	3,647

Oil Truck Movement Up

N. P. N. News Bureau

WASHINGTON, June 27. — Movement of petroleum products by truck in May was 13.4 per cent above the May movement last year, American Trucking Associations, Inc., reports in its monthly figures on truck loadings.

May tonnage of petroleum products moving by truck was 2.75 per cent above April this year, also, the A. T. A. reports.

At the same time, May tonnage of all commodities, generally, was 19.66 per cent below the figure for May last year, the figures show, and was 0.75 per cent below the April movement.

Clean Rest Rooms

N. P. N. News Bureau

CHICAGO, June 20.—When the 95,000 stockholders of the Standard Oil Co. of Indiana opened their dividend envelopes last week they found enclosed a personal message from Edward G. Seubert, president, on clean station rest rooms.

Attention of the company stockholders is called to the advertising of clean rest rooms being done by the parent company and its subsidiaries, American Oil Co., Pan American Petroleum Corp., and Utah Oil Refining Co. Services in stations are described as "dividends of convenience and safety to motoring travelers."

"'Make the most of these 'service dividends' yourself, and mention them to your motoring friends," it is suggested to stockholders. "Help dealers of the companies named to appreciate the profitable consequences of performing the extra services well. You will be helping your company if you do so," reads the message.

"Soil Survey" Is New Tool Of Geology; Not Oil Finder

N. P. N. News Bureau
By LAWRENCE E. SMITH

TULSA, June 27.—There has been just enough publicity of a popular nature given to the "soil survey" to open a new field for the faker who, posing as a man of scientific attainments, may go up and down the land offering to locate oil fields on the basis of chemical analyses of earth samples.

In the many communities where there are no oil fields and an aura of mystery surrounds oil finding, many a promotion scheme could be launched and the promoter reap a quick harvest. The people of such communities seldom know where to turn for guidance whenever an "oil finder" of any description comes along. Farmer and small-town business man have backed such spurious ventures with cash, to their loss and to the discredit of the oil industry.

The "soil survey" is currently a field of technical research. Its proponents do not pretend to find oil fields. One of them a Fort Worth firm who offers a consulting service in doing the work, disclaims any wizardry, by saying in a pamphlet explaining the method, that anyone who uses such a survey with the expectation of finding oil is misled, that all the system finds is geological structure.

Theory of Soil Survey

The theory of the soil survey, usually credited to E. F. Rosaire, consulting geophysicist, Houston, briefly is that throughout the ages there have been emanations of gas from oil deposits and that hydrocarbons so carried toward the surface have remained in the soil near the surface. Chemical analysis of the soil of course, will reveal such hydrocarbons. In some instances the concentration may be great, in others so "lean" as to call for the most specialized kind of analytical work—they speak of "parts per billion" in the discussions.

On the face of things, such evidence would seem to indicate the presence at some depth or other of oil. However, there are so many limiting factors, say many of the geologists and geophysicists, that the soil survey must be regarded now as no more than a tool of the profession, not as a method of finding oil; and as a tool it is still in process of being fashioned and shaped to practical usage—more is yet to be learned about it than is now known.

It is no proof of the validity of the theory that soil surveys in existing oil fields have revealed hydrocarbon concentration, say those who counsel against abuse of the theory. There is no such thing as a perfectly operated oil field. Leaks in casing, bad casing seats, leaks in underground pipelines would permit the escape of gas which, finding its way upward through the soil, would leave behind hydrocarbon particles.

May Be Misread

In an area where no developed oil field exists, hydrocarbon evidence near the surface would be no indication that the oil pool lies directly beneath, as was stated in an article in a popular magazine early in June. The escape of gas might be along a fault plane. There are not many faults that are absolutely vertical. They may have a hade, or angle from the vertical, of 45 degrees or more.

If the gas came from down around 10,000 feet—not at all unlikely in areas of thick sedimentary beds—it might travel along a fault plane, or fractured zone and come to surface 10,000 feet or more from the point directly above the oil. That's two miles away and a well drilled on the basis of this surface evidence would miss the target. The present writer is no hand to try to mix into scientific matters, hence this little piece must not be considered as an attempt to disparage the theory which several gentlemen of the geological and geophysical profession believe worthy of further research.

This brief discussion is intended as warning to the citizens whom a promoter might approach, pretending to analyze soil and thus discover oil. Consultants who are now in good faith offering this service are dealing with the oil industry, not the public, and are working with men who use better known methods of finding favorable structural conditions that might lead to discovery of oil fields.

Chance for Fakers

Just as the charlatan seizes upon the most superficial part of a new therapeutic theory and offers it to the public as a certain cure for cancer, there is a pretty good chance that some of the doodlebug oil finders now in practice will switch to the soil survey. Little equipment would be needed. A post-hole auger, some bottles to contain the soil samples and a reverent reference to the "head of our research department at the home office," and, perhaps, an up-to-minute knowledge of train departures.

In many a community the oil marketer is the only man who has any knowledge of oil fields and who appreciates the way that a scientific fragment may be distorted into a money making scheme. He would perform a service to his community the first time some slick-talking stranger appears with the information that he has found evidence of an oil field by looking at the dirt down on Mr. Smith's south forty if he would advise those approached to run, not walk, to the nearest state geologist.

Pollution Bill 'Curbs' Powers Of President, So FDR Vetoes

N. P. N. News Bureau
WASHINGTON, June 27.—The stream pollution bill, which negotiated a Congressional course beset with tribulations and emerged, today died at the hand of President Roosevelt.

In vetoing the measure the President said he did it because the bill delegated too much of the Chief Executive's power to legislative branch.

So, the pollution fight will be waged all over again in the next Congress.

The Congressional path of the pollution measure began, at the past session, with the introduction of two bills. The Vinson-Barkley bill provided for federal co-operation and aid in abating pollution; the Lonergan measure provided for strict federal "policeman's club" control.

The former was passed by the House. Sent to the Senate, the provisions of the latter were substituted as amendments. Back to the House the amended measure went; the House would not agree. Conferees were appointed—in August, 1937.

Because of promise or principle, House conferees stood firm for the co-operation bill passed by their branch; the Senate conferees likewise bulwarked themselves to forestall loss of the federal control provisions. They were at a stalemate for months.

Just before the end of the last session the Senate conferees "cracked" and a bill was passed which was in effect similar to the Vinson-Barkley bill.

It provided, among other things, for loans and grants-in-aid to states, cities public bodies, and industry upon approval of the Secretary of the Treasury. The money, of course, was to be used for pollution abatement. (NPN, June 8, p. 8.)

Both houses of Congress agreed to the compromise, and it was sent to the President. Roosevelt, in vetoing it declared:

"I fully approve the establishment of a Division of Water Pollution Control in the Public Health Service . . . (but) . . . this bill provides for the legislative assumption of responsibilities of the executive branch, and, therefore, runs counter to the fundamental concept of our budget system . . ."

The bill provided for direct presentation of recommendations of the Surgeon General for the authorization by Congress of specific projects without any opportunity for review by the President.

A new start on pollution control will have to be made in the next Congress.

New Illinois Area Is Opened by Test

CENTRALIA, Ill., June 27.—A new field near the west side of the Illinois coal basin has been opened by The Texas Co., in its No. 1 E. Tate, northwest of the northwest of Sec. 5, township 1 north, range 2 east, Marion county, about seven miles east of Centralia.

The well was tested in the McCloskey lime, which was found at 1900 feet and drilled to 1915 feet, and on drill stem test the well flowed 38 barrels in 2 hours, oil and mud. McCloskey is the pay formation of the Clay City and Noble areas to the east, which fields last year put Illinois back in the roster of active producing states. These fields are in the deep part of the basin and pay is found about 1100 feet deeper than in the new well near Centralia.

The well is now being plugged back to the Benoist sand, which was found at 1692 feet, and probably will be produced from that formation, leaving the McCloskey to be exploited by future wells. The Texas Co. has a large block of leases in this area and holds nearly all the acreage for considerable distance around the new well.

Buyers Warn Of Too High Kansas July Allowable

(*Continued from page* 9)
the allowable of another and has yet to decide the fourth case. The commission obviously is keeping price considerations apart from the market demand question. The Kanotex price, recently raised 10 cents, is still 15 cents under major postings.

Based on 70-72 Octane

The Kansas commission, as previously published, also raised the allowable in the Otis pool where Bay Petroleum Co. is buying crude on basis of the tank car price of 70-72 octane gasoline on a schedule which currently indicates that the crude price over June will be at least 25 to 30 cents under major company postings. Six operators are affected by this method of buying.

The Kansas commission's burden seems to be growing lighter, for it gave notice this week of a 50 per cent reduction in the assessment made on production to pay expenses of the conservation department. It upped the rate last October from one-tenth cent per barrel to one-fifth; now, effective with June, it drops back to one-tenth. The commission explained that the raise was necessary last fall because of supervision work on taking potential ratings on wells.

Louisiana's Department of Conservation announced its July allowable as 249,725 barrels daily, a reduction of 750 barrels from the June daily figure. Rodessa was reduced 2,000 barrels to 38,000 and this amount was split between Lisbon, upped to 10,000 and Cotton Valley, raised to 5,000. Other changes were minor.

Joe Aylward, Kansas producer, is reported selling crude oil from his wells in the Otis, Kans., pool to Globe Oil & Refining Co. Aylward has his own gathering system. Approximately 2200 barrels of Otis crude will be moved monthly by rail to Globe's McPherson, Kans., refinery.

Bay Petroleum Corp. formerly bought Aylward's Otis pool production. The change in market outlets was made shortly after Bay inaugurated a new crude price schedule based on price of 70-72 octane gasoline.

Okla. July Allowable

By Telegraph

OKLAHOMA, June 28.—Oklahoma Corporation Commission's conservation officer will recommend to the commission at its regular monthly meeting that Oklahoma's July allowables be set at 428,000 barrels daily. Allowables in prorated fields would be unchanged. Proration in stripper areas—which has been based on 85 per cent of January-February runs—will be lifted, if the recommendations are followed. The Oklahoma allowable at the start of June was 405,000 barrels.

Tank Wagon Prices Hiked In Sixteen States

CLEVELAND, June 28.—During the past 10 days, three oil companies marketing in 15 states, have restored to normal tank wagon prices of gasoline by increasing prices in amounts ranging from 0.5 to 1.5 cents generally.

On June 29 Standard Oil Co. of Indiana will restore to normal all reduced tank wagon prices to consumers on Stanolind (third grade) gasoline, Standard tractor fuel, and Perfection kerosine, through Illinois, Indiana, Iowa, Minnesota, Missouri, North Dakota, South Dakota and Wisconsin. Company officials estimate that this advance will average 1.5 cents on Stanolind gasoline, and 1.3 cents on tractor fuel and kerosine. Kansas and Michigan prices were unchanged.

On June 23 Standard Oil Co. of Nebraska advanced tank wagon, dealer, and company service station prices for all brands of gasoline 1.5 cents at points in Nebraska where prices were subnormal this amount. All other subnormal prices were advanced to normal, but normal prices were unchanged.

On June 20 Standard Oil Co. of Kentucky advanced its tank wagon prices to consumers and net dealer prices on Crown and Kyso gasoline 0.5 cent generally, through Kentucky, Alabama, Mississippi, Georgia, and Florida, but points where prices had been subnormal more than this amount were raised as high as 1.0 cents. Normal prices were advanced 0.5 cents.

Ted Hall Goes to Bank

DALLAS, June 25. — Ted A. Hall, for 16 years an engineering and production executive of Tide Water Associated Oil Co. in Oklahoma and Texas, has resigned to become chief oil appraisal engineer of the First National Bank of Dallas.

Huxman's Oil Control Talk Still Echoes at Washington

N. P. N. News Bureau

WASHINGTON, June 27.—An echo of the threats by Kansas' Governor Huxman to withdraw Kansas from the Interstate Oil Compact and advocate federal control of the oil industry unless his state gets a larger share of oil proration has appeared in one of the post-season editions of the Congressional RECORD.

During the last days of a session, many congressmen ask permission to insert in the RECORD an "extension of remarks." Many of these are not printed until after the session is over, since during the final days the Government Printing Office is overcrowded with actual floor remarks and debate.

The latest echo of the Kansas governor's visit to Washington in May (N. P. N., May 11, p. 11) is the speech by Rep. Clifford R. Hope, Kans., on the subject "Oil Proration Must Be Fair," printed in the RECORD over a week after adjournment.

Earlier, and just before the Congress adjourned, Rep. John M. Houston, Kans., introduced a bill which might be traced back to Huxman's visit, and his earlier threats. The Houston bill (N. P. N., June 8, p. 7) would have increased the import tax on crude and fuel oil from 0.5 to 1.5 cents a gallon, and provided for embargoes on imports whenever supply exceeds demand to the extent that purchasers will not take any state's legal production, or whenever the price of fuel oil dropped below a certain parity with the price of coal.

The bill never got beyond reference to the Ways and Means Committee.

"Must Consider New Areas"

In his "post-session" speech, Hope declared that "if oil proration is to succeed, it must not only take into account existing production, but must give consideration to the development of new producing areas."

"It seems to me," he said, "that one of the great faults of the present system of proration under the Interstate Compact program arises out of the tendency to consider oil production as static. Certainly no adequate consideration has been given during the last two or three years to the great new producing areas of Kansas in determining the allowables for that state."

This was the plaint of Huxman at a conference of refiners before his Washington visit, as well as on his visit here—that Kansas' allowables are not fixed in accordance with her potential production, which has been developing rapidly while allowables have been at a virtual standstill.

An example of the "improper consideration" now being given new production in determination of allowables, Hope said, is shown by the fact that, compared with a national production of one barrel daily for each 4500 in reserve, "Louisiana produces one barrel for each 2800 in reserve; Oklahoma, one for each 3100; Texas, one for each 6100; and Kansas, one for each 8500."

Market Has Shrunk

Hope said that five years ago "Kansas was permitted to market more than 50 per cent of its production, while today it is permitted to market only 6 per cent of the total potential production."

Expressing assurance that "almost everyone who has a knowledge of the oil industry in this country" believes there should be some control to prevent price demoralization and promote conservation, and that the "overwhelming sentiment is for voluntary and co-operative control," Hope declared:

"If, however, the efforts for voluntary and co-operative control are ging to result in discrimination between producers of oil in the various states, and if they fail to give consideration to new producing areas, then those areas which are discriminated against will be forced to withdraw (from the interstate compact)."

"If this is done," he continued, "federal control will probably be the only way to avoid complete demoralization."

In a more placatory tone, Hope concluded:

"I am not suggesting that Kansas is ready to give up its efforts to co-operate with other oil-producing states. I do say, however, that unless there is a greater effort by pipeline companies, refiners, and those representing the oil interests of other states to see that Kansas gets a square deal, the oil producers of our state must necessarily consider whether they can continue to be parties to an arrangement which operates so unfairly as to them."

Hearings Scheduled by ICC On Montana-Wyoming Rates

N. P. N. News Bureau

WASHINGTON, June 27.—An Interstate Commerce Commission Examiner will hold hearings July 14 at Chicago on the application of Standard Oil Co. of Indiana for lower freight rates on petroleum products from its Greybull, Wyo., refinery to points in the Dakotas and Minnesota.

Two days later, July 16, at Fargo, N. D., another ICC examiner will conduct hearings on the applications of railroads for permission to establish lower rates from Laurel and Billings, Mont., to specified Dakota and Minnesota points without decreasing rates to intermediate points.

Both cases grow out of the same situation.

In March 1937, Independent Refining Co. and Yale Oil Corp., both of Billings, asked that they be granted lower rates for their products, from refineries at Laurel and Billings to Dakota and Minnesota points. Basis for their complaint was the charge that refiners in Wyoming and the Mid-continent at points equidistant to and farther from the same destinations enjoyed lower rates, which, they said, were prejudicial to the Montana refiners.

Numerous intervenors joined the case, both from Wyoming and the Mid-Continent, but the ICC decided in favor of the Montana refiners' contentions, and granted the lower rates. That was last December (N.P.N., Jan. 19, 1938, p. 18, shows table of comparative rates.)

Attempt to Reopen Fails

An attempt was made to have the case reopened, for reconsideration, but the ICC declined. Petition for reopening was filed by Cities Service Oil Co. of Delaware, Skelly Oil Co., and Socony Vacuum Oil Co. (White Eagle Division). (N.P.N., April 27, p. 28.)

A few weeks before this attempt at reopening the case was denied, Standard of Indiana petitioned ICC for lower rates from its Greybull refinery to the Dakota and Minnesota points, asserting that before granting of the December increase, rates from Greybull to many of the destinations were identical with those from Laurel and Billings, but that the December order, which granted increases up to 23.5 cents per hundredweight, made some of the rates from Greybull to points equidistant and nearer Greybull than to Laurel and Billings higher than those paid from the Montana refineries. (N.P.N., April 6, p. 27.)

Hearing in this case was originally set for May 6, but was postponed and now the July 14 date has been set.

Fourth Section Applications

Shortly after the ICC order reducing the rates from Laurel and Billings, the railroads filed Fourth Section applications covering the decreases ordered to the specified points, but asking that normal rates be maintained to intermediate points. The rails' applications, which are the basis for the Fargo July 16 hearing, also asked to make reductions from other Montana points to the specified destinations, with Billings and Laurel rates as a maximum, and at the same time readjust rates to the intermediate points. The Fourth Section applications also cover certain destinations in Wisconsin.

Fourth Section applications must be filed whenever rails seek to make a departure from the rule laid down in the fourth section of the Interstate Commerce Commission Act requiring that rates for a long haul shall be no less than a combination of rates for intermediate hauls over the same route and line.

Three Refining Plants Planned in Centralia

N. P. N. News Bureau

TULSA, June 28.—One of the three skimming plants already built or now being built at Centralia, Ill., the Power Oil & Refining Company's 2000-barrel refinery, is making test runs. The other two are known as the Phoenix Refining Co. and the Egyptian Refining Co.

The Bell Oil & Gas Co., Tulsa, today announced that it would handle sales of the Power refinery output and that it would place two representatives at Centralia. Besides handling refined products, Bell by arrangement with the Power company will market crude oil from the Centralia and adjacent fields. The Power company has its own pipeline to the crude supply.

Gasoline deliveries will be started July 1, Bell's statement said. A loading rack has been built on the Missouri Pacific line and a dock has been installed for the servicing of trucks.

Burford Companies Sued

N. P. N. News Bureau

TULSA, June 25.—Skelly Oil Co. has filed suit in U. S. district court against West Texas Refining Co. and East Texas Refining Co., both Freeman W. Burford enterprises, asking $58,719.19 and a further unnamed amount, press dispatches say.

The plaintiff said the money was due under a contract for building and maintenance of a 34-mile, six-inch pipeline from the Hendrick pool, Winkler county, and Pecos, Texas, in 1928, together with loading rack and spur tracks at Pecos.

Ill. Legislature Kills Oil Bills

By Teletype
N. P. N. News Bureau

CHICAGO, June 28.—Three petroleum bills were killed today on third reading in the special session of the Illinois legislature. The other bills, including one on a severance tax, have been referred to the committee.

The three house bills acted on today were those for permitting co-operative pooling for drilling, on compulsory drilling of offset wells, and the mechanics lien bill.

The three house bills referred to committee are the conservation bill, the 2½ per cent severance tax, and the pipeline bill regulating transportation and storage.

Since calling the special session Gov. Henry Horner has called a special concurrent session. One of the items in the call for the concurrent session was to allow Cook county (Chicago) to divert gasoline tax funds for relief.

This diversion bill has passed the house and now is before the senate. At present Cook county diverts $3,000,000 annually for schools. The diversion bill provides for diverting $2,500,000 annually for relief starting at once and to repeal the school diversion on July 1, 1941.

Extension of Coalinga Is Indicated

N. P. N. News Bureau

LOS ANGELES, June 24.—Extension of the Coalinga oil field in the direction of the Kettleman Hills north dome was considered a possibility as a result of formation tests made on the Gatchel No. 2 in section 18-20-16, about six miles north of the town of Coalinga.

Drilled jointly by Petroleum Securities Co., Honolulu Oil Co. and Seaboard Oil Co., the well is reported to have flowed during the test at the rate of 3000 barrels daily from a 34-foot sand at a depth of 6815 feet. Gravity of the oil was given as 36 degrees and the accompanying gas output was estimated at 10,000,000 cubic feet daily.

Approximately 3500 acres are owned or controlled by the three interested companies. Standard Oil Co. of California has every odd section in the area. Other companies controlling adjoining acreage include Superior Oil Co., Texas Co., and Universal Consolidated Oil Co.

Northwestern Ohio Oil Jobbers Plan Ox-Roast At All-Day Picnic July 12

TOLEDO, O., June 28.—Members of the Northwestern Ohio Oil Jobbers Assn. have put a big red circle around the July 12 date on their calendars. That's the date the organization has set for its all-day picnic and ox roast.

The place will be Legion Island, 1½ miles south of Waterville, Ohio, on U. S. Route 24. Completely surrounded by water, this spot boasts a large club house, beach, horse shoe pitching, shuffle board, tennis, baseball diamond, and row boats.

According to Eddie O'Donnell, O'Donnell Oil Co., Toledo, chairman of the picnic committee, the chefs will be at the island two days ahead of time to prepare the ox roast, and the program during the day of the outing will include an orchestra, entertainers, boxing, wrestling, baseball, and refreshments.

Admission to the island will be by ticket only, at $2 per head, and the party will be strictly stag. Admission is limited to 200.

World's Fair Exhibit

NEW YORK, June 28.—Construction work has started on the Petroleum Building for the 1939 New York World's Fair, which it is estimated will cost $265,000. It will be of all-metal construction and, instead of resting on a normal foundation, will be supported 20 feet off the ground by four large semi-cylindrical forms constructed of steel riveted plates resembling oil storage tanks.

Motor Fuel Distribution Trend Is Through Outlets of Jobbers

N. P. N. News Bureau

By ALLEN S. JAMES

TULSA, June 27.—That the trend in the distribution of motor fuel has been away from the outlets of the major and semi-major oil companies and towards those of the established jobbing companies is borne out by a recent study made by NATIONAL PETROLEUM NEWS of gallonage changes in six states in the middle west.

The major and semi-major oil companies in these states in 1937 had an average increase of approximately 5 per cent in gallonage through their own outlets.

The rank and file of distributors in the same area, the "all other companies," largely the local jobbing companies, enjoyed an increase of a little over 10 per cent. The overall increase in motor fuel consumption in the six states in 1937 was between 7 and 8 per cent.

These percentage figures in gallonage increases were obtained from a study of the tax reports for the states of Indiana, Illinois, Iowa, Kansas, Oklahoma and Missouri. They add support to the statement made in NATIONAL PETROLEUM NEWS, Feb. 9, 1938, page 32, that the trend in motor fuel distribution in the middle west for the past two years has been away from the major companies and toward the jobbers, semi-majors and independent operators.

That does not mean, however, that the major companies are not, in the final analysis, getting their share of the consumption increase in their marketing territories. It means rather that the majors have been shifting the distribution of their products from their own outlets to those of good, live jobbers. This shift has been in both retail and wholesale units.

The change has been a result of the sales programs which have been set up by some of these companies to aid in the distribution through jobbers of their branded motor fuels. These programs have included various forms, advertising and sales promotion, personal help from the oil company's sales force. Some of the smaller semi-major companies, in fact, have been particularly successful in working with independent jobbers as outlets for their products, to help these jobbers build their businesses into profitable enterprises in periods when the jobber's margins have been narrowing.

The shift in the method of distribution naturally has meant a change in tax payments, the responsibility being shifted from the majors to the jobbers. It can be seen, therefore, that, while the larger distributors had an increase of only 5 per cent in gallonage on which they paid the taxes, a sizable portion of the gallonage increase credited to "all other companies" was made up of motor fuel supplied by the major companies.

Keeping that thought in mind it might be interesting to see just how some of these major and semi-major marketing companies fared in the six middle western states in 1937 as compared with 1936. A picture of the situation can be obtained from a study of Table No. 1, which lists the percentage changes in gallonage on which 11 major and semi-major companies paid taxes, along with the percentage change in gallonage of "all other companies." The table also shows the per cent of each company's total gallonage to total consumption in the six states.

It will be observed that the shift in gallonage on which the 11 companies paid taxes amounted to 1.2 per cent of total consumption in 1937.

Gallonage Studied

A breakdown to show the percentage changes by states is shown in Table No. 2. A study of this table indicates that the "all other companies" surged ahead more rapidly in the Indiana, Illinois and Iowa area than in the other three states, although they had a fairly good percentage gain in Oklahoma. It is interesting to note that the average percentage increase for the 11 companies did not equal, in any one of the six states, the total percentage gain in consumption, although in individual states some of the companies went far ahead of that state's percentage gain in consumption.

Marketing experts who have followed the situation closely in the middle west are agreed generally that the trend toward greater jobber distribution first made itself noticed early in 1936, and has moved along almost without interruption since that time. While no figures have been broken down for the first months of 1938, the opinion has been expressed in some quarters that this trend has become more sharply defined since the first of the year. This is due, it is said, to more widespread leasing of formerly company-operated bulk and retail outlets to already established jobbers.

TABLE 1

How Majors and Semi-Major Oil Companies and All Other Distributors in Six Middle Western States Fared in Gallonage Increases or Decreases Through Their Own Outlets in 1937. Percentages Based on Gallonage Figures from State Tax Reports

Company	Per Cent Change	Per Cent of Total Consumption 1936	1937
Standard Oil Co. (Ind.)	+4.2%	16.8%	16.4%
Sinclair Refining Co.	+2.2	7.2	6.9
Texas Co.-Indian Refining Co.	+6.2	6.0	6.0
Shell Petroleum Corp.	+7.1	6.5	6.5
Phillips Petroleum Co.	+4.1	6.7	6.5
Socony-Vacuum	+9.7	2.6	2.7
Mid-Continent Petroleum Corp.	+6.6	2.6	2.6
Continental Oil Co.	+8.2	2.4	2.4
Cities Service Oil Co.	+2.8	2.2	2.1
Skelly Oil Co.	—0.4	1.8	1.6
Barnsdall Refining Co.	—9.1	0.6	0.5
TOTAL	+4.7	55.4	54.2
All Other Companies	+10.1	44.6	45.8
TOTAL CONSUMPTION	+7.1	100.0	100.0

Note—The above percentages do not represent net changes in total gallonage of these companies, by only percentage increases or decreases in gallonage on which the company was responsible for the tax.

Col. Ayres Operated On

TULSA, June 25.—Col. Arthur B. Ayres, president of the Union Oil & Mining Co., underwent an emergency abdominal operation June 23 in a Tulsa hospital. He lives in Fortville, Ind., and was on a trip to properties of his company in Oklahoma and Texas. His condition is reported to be satisfactory.

TABLE 2

Percentage Changes in Gasoline Gallonage for 1937 of 11 Major and Semi-Major Distributors and of All Other Distributors, Through Their Own Outlets, in Six Middle Western States. Percentages Based on Gallonage Figures Obtained from Tax Reports

Company	Indiana	Illinois	Iowa	Missouri	Kansas	Oklahoma	Total
Standard Oil Co. (Ind.)	+ 6.0%	+ 3.8%	+ 7.4%	+ 1.1%	+ 1.4%	— 4.8%	+ 4.2%
Sinclair Refining Co.	+ 1.8	— 0.4	+11.6	+ 3.9	+ 1.8	+ 4.7	+ 2.2
Texas Co.—Indian Refining Co.	— 4.2	+ 8.1	+ 1.0	+10.2	+ 6.1	+ 1.9	+ 6.2
Shell Petroleum Corp.	+ 5.6	+ 8.4	+ 8.2	+ 6.3	+ 1.6	+ 0.8	+ 7.1
Phillips Petroleum Co.	+ 1.0	+ 6.0	+ 4.9	+ 2.7	+ 6.0	+ 1.4	+ 4.1
Socony-Vacuum	+23.0	+14.7	+ 7.3	— 1.8	+ 1.1	.....	+ 9.7
Mid-Continent Petroleum Corp.	+ 0.5	+ 7.1	+ 6.2	+ 7.9	+12.9	+13.6	+ 6.6
Continental Oil Co.	— 4.7	+18.7	+14.5	+ 7.6	+ 6.0	+ 5.2	+ 8.2
Cities Service Oil Co.	+11.7	+10.8	— 5.1	— 4.9	+ 5.7	— 3.1	+ 2.8
Skelly Oil Co.	.....	— 6.0	+ 2.0	— 1.2	— 2.1	+ 1.8	— 0.4
Barnsdall Refining Co.	.....	+15.6	— 4.0	— 1.2	—14.4	—12.7	— 9.1
TOTAL	+ 5.5	+ 5.4	+ 5.5	+ 3.1	+ 2.4	+ 2.5	+ 4.7
ALL OTHER COMPANIES	+13.8	+13.6	+14.5	+ 3.3	+ 5.9	+ 8.0	+10.1
TOTAL CONSUMPTION	+ 9.2	+ 8.5	+ 9.5	+ 3.2	+ 4.4	+ 5.7	+ 7.1

Note—The above percentages do not represent net change in total gallonage of these companies, but only the percentage increases or decreases in gallonage on which the company was responsible for the tax.

New Reports Fly On Mexican Oil

By Teletype

WASHINGTON, June 28. — Reports reaching here from Mexico City on one another's heels concerning developments in the Mexican oil situation have all run up against the same State Department stone wall—"no comment".

Reports have included one that President Cardenas had suspended a $22,500,000 bond issue, from the proceeds of which the oil companies whose properties were expropriated were to have been paid. Another report a little later said this was interpreted as an indication that the properties might be restored to the companies. Still no comment.

There was no press conference at the State Department today, so no official status has been given the most recent report, namely that the Mexican government has entered into an agreement with W. R. Davis, of New York and Boston, calling for the sale of $10,000,000 worth of petroleum and products, of which 90 per cent will go to Germany.

Late last week former Secretary of War Patrick J. Hurley, former NRA head Donald R. Richberg, Standard Oil Co. (New Jersey) president W. S. Farish, and Standard Counsel T. R. Armstrong called on Secretary of State Hull, presumably in connection with the situation arising out of the seizure of oil properties in Mexico, but the department declined to comment.

Hull has continued to tell the press at his almost daily conferences with its representatives that "informal discussions" were proceeding, but that nothing of a tangible nature has been arrived at.

Plan Counter Claim

The department also has at hand a statement made in New York recently by Eugene Holman, president of Huasteca Petroleum Co., a subsidiary of the Standard Oil Co. (New Jersey) that the Mexican government is working up a claim that the oil industry owes the government a sum at least equal to the value of the seized properties.

"With the elimination of any discussion of the value of oil underground, which is the principal asset of a producing company, and with huge counter claims being built up, it would be practically impossible to deal with the Mexican oil question along rational lines," said Holman.

Holman said the Mexican press had announced that a public investigation would be held into "reputed irregularities" on the part of the oil companies which had been operating in Mexico and that the syndicate of Mexican petroleum workers had announced that claims would be made against the oil companies for damages alleged due them when the labor contracts were declared broken by the Mexican courts just prior to the expropriation.

Japs Active In California Market

N. P. N. News Bureau

LOS ANGELES, June 25.—Japanese Navy will soon be ready to contract for additional supplies of aviation gasoline while nationals of that country are actively seeking cargoes of refinable crude, according to reports current here.

Weekly Crude Stocks Drop 1,266,000 Bbls.

By Teletype
N. P. N. News Bureau

WASHINGTON, June 28.—Another drop of 1,266,000 barrels in refinable crude stocks during the week ended June 18 brought these stocks to 295,931,000 barrels on that date and made the decrease in stocks since the beginning of the present downward trend on April 23 a total of 11,673,000 barrels, Bureau of Mines figures show.

June 18 stocks were the lowest since March 27, 1937. On June 19, 1937, the nearest comparable date last year, they were 307,465,000 barrels.

During the week ended June 11 refinable crude stocks had dropped 1,606,000 barrels. Stocks by "grade or origin" showing recent changes follow:

Grade	June 4	June 11	June 18	Chg. from June 11
	(Thousands of barrels)			
Pennsylvania grade	5,799	5,889	5,996	+ 107
Other Appalachian	1,445	1,387	1,398	+ 11
Lima-Michigan	1,625	1,607	1,584	— 23
Illinois-S. W. Indiana	10,363	10,404	10,453	+ 49
Arkansas	4,080	4,050	3,794	+ 256
Kansas	6,290	6,573	6,687	+ 114
Louisiana	12,360	12,550	12,840	+ 290
Northern La.	5,971	5,843	6,078	+ 235
La. Gulf Coast	6,389	6,707	6,762	+ 55
New Mexico	8,483	8,464	8,592	+ 128
Oklahoma	89,032	88,079	87,427	— 652
Texas	99,968	98,583	97,733	— 850
East Texas	27,822	26,568	25,995	— 573
West Texas	20,022	20,197	19,997	— 200
Gulf Texas	18,077	18,222	18,296	+ 74
Other Texas	34,047	33,596	33,445	— 151
Rocky Mountain	23,974	23,919	23,761	— 158
California	32,204	32,656	32,589	— 67
Foreign	3,180	3,036	3,077	+ 41
Total U. S. Refinable	298,803	297,197	295,931	—1,266
Heavy in California	17,295	17,309	17,562	+ 343

S. O. Ind. Subsidiary To Be Liquidated

By Teletype
N. P. N. News Bureau

TULSA, June 28.—A plan to liquidate its subsidiary Stanolind Crude Oil Purchasing Co., was announced today by the Standard Oil Co. (Indiana). The former June 30 will transfer all its properties, including oil in storage and shares in the recently formed Stanolind Oil Purchasing Co., to the parent company.

Following the transfer, Standard of Indiana will buy oil directly in all areas hitherto served by the Stanolind Crude Oil Purchasing Co. except Texas, where the new Stanolind Oil Purchasing Co. will function. Standard of Indiana has posted the same prices and purchase conditions as are now in effect by its subsidiary.

Thus, instead of a subsidiary purchasing company, it will be an oil purchasing department that will function in Tulsa. This department will be headed by A. W. Peake, vice president of the Standard, at Chicago, with Ralph O. Dietler as general manager and A. L. Carlson as auditor at Tulsa.

Continental To Lay Pipeline to Denver

By Teletype
N. P. N. News Bureau

TULSA, June 27. — Continental Oil Co. will lay a six-inch pipeline from the Lance Creek field, Wyoming, to Denver to supply the company's refinery at that point. The line will be nearly 250 miles long and is the first major pipeline construction for the Rocky Mountain territory since 1929 when a gas line was laid from Wyoming to Salt Lake City. The estimated cost is $2,000,000.

Aside from the small production north of Denver, Continental's crude requirements for the Denver refinery have been shipped by tank car. The company has substantial reserves in the Lance Creek field, which is in Niobrara county, east of Casper.

Continental officials deny their pipeline project has any connection with the "mysterious" Cilebur Corp., which recently filed application in Cheyenne to lay a line from Lance Creek to Denver. The Cilebur is represented by two Denver attorneys who have not revealed names of the principals.

Robert H. McElroy Dies After Long Illness

CHICAGO, June 28.—Robert H. McElroy, a vice president of the Standard Oil Co. of Indiana since 1927, died at Evanston Hospital June 25 following an illness of several months. Funeral services were held June 28.

Mr. McElroy, 61 years old at the time of his death, attended Chicago schools when a boy, and at the age of 14 began work with the Chicago, Milwaukee & St. Paul railroad as a messenger boy. He rose to various positions, and in 1898 became chief clerk of the road. In 1906 he joined the Standard Oil Co. in Chicago as chief tariff clerk of the traffic department, advancing to the position of traffic manager in 1917.

In 1922 Mr. McElroy was elected to the board of directors of the company, and became vice president in 1927. Through his late years he was high in the management of the company, directing the transportation of products by rail and boat from refineries and storage points as well as the inbound movement of equipment and supplies.

Pallbearers at the funeral were Edward G. Seubert, Allen Jackson, E. J. Bullock, A. E. Smith, C. O. Beroth, and T. M. Hyland.

Mr. McElroy is survived by his wife, a son, Robert H., who is with the Pure Oil Co., and a daughter, Mrs. Alzia Drake.

Filing Time Delayed

MINNEAPOLIS, June 27.—Extension of time until early August for filing answers, demurrers or other pleadings has been granted to nine major oil companies named as defendants in the treble damage suit, based on Madison oil case, field by Twin Ports Oil Co., Duluth.

Current Drop in "Gas" Stocks Over 2 Million Bbls., API Reports

By Teletype
N. P. N. News Bureau

NEW YORK, June 28.—Gasoline inventories at U. S. refineries were slashed 2,064,000 barrels the week ended June 25, with the Texas Gulf district showing a drop of 1,008,000 barrels and accounting for nearly half the drop, the regular weekly report of the American Petroleum Institute revealed today.

With the large drop in stocks last week, total refinery inventory in the U. S. has been drastically reduced a total of 5,355,000 barrels in the past four weeks.

The sharp drop in stocks in the Texas Gulf district is probably to be accounted for in the drop of 71,000 barrels in daily average crude runs in this district, rather than to any unusually heavy draft in storage due to increased shipments. Domestic cargo shipments from this district the past week have not been exceptionally active, nor have foreign cargo sales accounted for any appreciable drop in inventory.

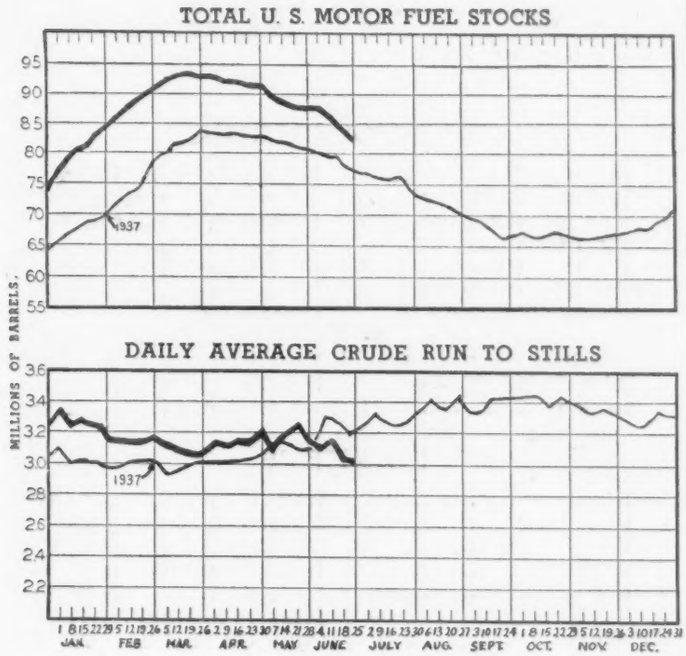
Gasoline stocks at California and Louisiana Gulf districts both dropped more than 200,000 barrels during the week, the A.P.I. reports. Oklahoma-Kansas-Missouri had 116,000 barrels taken from storage. The East Coast dropped 77,000 barrels, Rocky Mountain stocks fell 58,000 barrels, Indiana-Illinois-Kentucky dropped 55,000, Appalachian 34,000, while Inland Texas remained fairly constant, dropping only 4000 barrels. The North Louisiana-Arkansas district was the only one to increase storage to gasoline, adding 13,000 barrels during the week.

Operations at refineries reporting to the institute were off 1.7 per cent, according to the report. Texas Gulf operations dropped 8.9 per cent from 95.1 to 86.2 per cent of capacity. During the week ended June 25, all reporting plants operated at 73.7 per cent of capacity.

Due to decreased operations, refinery crude runs to stills were down 55,000 barrels on daily average. Total runs to stills averaged 3,025,000 barrels during the week, compared with 3,311,000 during a corresponding period last year and 3,080,000 the week ended June 18.

Crude runs at Oklahoma-Kansas-Missouri plants increased 34,000 barrels on daily average, with Inland Texas and Rocky Mountain both increasing 8000 barrels. These three were the only districts in the country to increase operations. California runs, dropping 13,000 barrels on daily average, had the second largest decrease following the Texas Gulf.

Gas oil and distillate stocks rose 445,000 barrels and residual stocks increased 349,000 barrels; or a combined increase in fuel oil inventory of 794,000 barrels.



DAILY AVERAGE PRODUCTION IMPORTANT DISTRICTS, American Petroleum Inst. Figures

	Week Ended June 25 Barrels	Week Ended June 18 Barrels
Oklahoma City	95,200	106,100
Total Okla.	408,450	446,050
East Texas	363,850	363,500
Total Texas	1,188,200	1,189,750
Kansas	153,000	159,550
Total La.	258,650	262,700
California	664,400	677,400
E. of Rockies	2,419,500	2,459,900
Total U. S.	3,083,900	3,137,300
Crude Imports.	49,000	100,570
Tot. new sup'ly	3,132,900	3,237,870

Gasoline Prices Up In Eastern Area

By Teletype
N. P. N. News Bureau

NEW YORK, June 28.—Socony-Vacuum Oil Co., effective June 28, advanced tank car and tank wagon gasoline prices 0.3 to 0.5 cents in upper New York state and Connecticut. Base tank car prices in the New York harbor market were advanced 0.25 cents, although no change was made in New York City tank wagon prices.

The company's new harbor tank car price for "mobilgas" (regular) is 7.5 cents, and 7.25 cents for 65 octane gasoline.

Standard Oil Co. of New Jersey today announced they had taken action similar to that of Socony in the same area, although the New Jersey company did not advance tank wagon prices.

Crude Price Changes

FINDLAY, O.—Effective June 22 The Ohio Oil Co. reduced Western Kentucky crude 10 cents, to new price of $1.30 per barrel.

* * *

LOUISVILLE — Effective June 22 Stoll Oil Refining Co. reduced Stoll Pipe Line oil in Kentucky 10 cents, to new price of $1.30 per barrel.

* * *

CLEVELAND. — Effective June 23 Fordsville Gathering Line, Inc., subsidiary of the Standard Oil Co. of Ohio, reduced all grades of Kentucky crude 10 cents, making new price for western Kentucky $1.30, and for Birk City field, Henderson county, $1.25 per barrel.

CURRENT REFINERY OPERATIONS

Districts	Per Cent Capacity Reporting	Daily Average Crude to Stills (Barrels) Week Ended		Per Cent of Reporting Capacity Operated Week Ended		Stocks (Thousands of Barrels) Total Finished and Unfinished Motor Fuel* Week Ended		Stocks of Gas and Fuel Oil Gas Oil and Distillates Week Ended		Residual Fuel Oil Week Ended		Total Week Ended	
		June 25	June 18	June 25	June 18	June 25	June 18	June 25	June 18	June 25	June 18	June 25	June 18
East Coast	100.0	491,000	498,000	73.4	74.4	22,507	22,584	5,101	5,003	7,191	7,127	12,292	12,130
Appalachian	88.4	103,000	105,000	79.8	81.4	3,163	3,197	239	220	941	940	1,180	1,160
Ind., Ill., Ky.	92.4	394,000	397,000	80.6	81.2	13,338	13,493	2,865	2,777	5,839	5,761	8,704	8,538
Okla., Kans., Mo.	84.7	296,000	262,000	77.3	68.4	7,246	7,362	1,047	1,035	3,096	3,071	4,143	4,106
Inland Texas	56.6	121,000	113,000	60.2	56.2	2,383	2,387	403	407	1,338	1,292	1,741	1,699
Texas Gulf	95.7	687,000	758,000	86.2	95.1	10,370	11,378	4,054	3,866	7,088	6,754	11,142	10,620
La. Gulf	96.6	112,000	120,000	66.7	71.4	2,821	3,030	1,336	1,337	2,063	2,070	3,399	3,407
No. La., Ark.	63.7	34,000	44,000	58.6	75.9	503	490	227	222	589	600	816	822
Rocky Mt.	69.7	50,000	42,000	80.6	67.7	1,984	2,042	129	124	737	718	866	842
California	90.9	439,000	452,000	58.8	60.6	13,837	14,083	9,342	9,307	81,376	81,586	90,718	90,893
Total Reporting	89.0	2,727,000	2,791,000	73.7	75.4	78,152	80,046	24,743	24,298	110,258	109,919	135,001	134,217
Estimated U. S. Total (Bur. of Mines Basis)		3,025,000	3,080,000			82,412	84,476	25,343	24,893	112,458	112,109	137,831	137,007

*Includes stocks at refineries, in bulk terminals, pipe lines and in transit.

Refiners Seek Rate Reduction

By Telegraph

FORT WORTH, Texas, June 28.—A group of independent refiners in the Mid-Continent who ship all their products by rail or truck met here June 25, and organized the Petroleum Rail Shippers Assn. Its purpose will be to petition the Interstate Commerce Commission for a 20 per cent reduction in rail rates from the Mid-Continent district to western trunk line destinations.

M. H. Champion, traffic manager of Anderson-Prichard Oil Corp., Oklahoma City, is president of the new organization. Douglass Orme, traffic manager for Cosden Petroleum Corp., Fort Worth, is secretary-treasurer. The membership totals 24.

Champion, speaking for the association, said that a 20 per cent reduction would mean approximately $40 per tank car of gasoline, which would save association members approximately $2,000,000 a year. He also said that the reduction probably would bring much of the traffic back to the railroads which had been lost to trucks and pipelines.

The association is composed of virtually the same group of refiners who oppose the freight rate increases granted by the ICC early in the year.

Ohio Oil Co. Announces Personnel Changes

TULSA, June 25. — Important changes in Ohio Oil Co. organization and personnel in the Mid-Continent were made known this week.

Walter W. Fleming, vice-president in charge of Oklahoma and Kansas, has been given increased territory and will direct the activities of the company in Louisiana, Arkansas and East Texas. He will continue to live in Tulsa.

Marketing and refining accounting will be transferred from here to Findlay, O., and consolidated with the general office accounting there. This involves the transfer of 10 employes to Findlay. Wholesale sales and traffic departments move to Fort Worth.

Re-arrangement of refinery sales activity takes J. P. Hughes from Tulsa to Louisville, Ky., to manage the Kentucky division. L. B. McCammon will continue to manage the Oklahoma-Kansas division, with Tulsa headquarters. H. L. Jackson has been transferred to Fort Worth to handle wholesale sales in that division, working under N. T. Stover, of the Robinson, Ill., office.

J. L. Cook, assistant treasurer and assistant secretary of the company, who has been with the company for 41 years, announced his retirement. He began with the company May 1, 1897 at the age of 21, at Toledo. He was offered the job by William Fleming, then president of the Ohio Oil Co. William Fleming was the father of Walter W. Fleming. Mr. Cook came to Mineral Wells, Texas, in 1919 as treasurer of the Ohio's subsidiary, Mid-Kansas Oil & Gas Co., and moved to Tulsa in 1923. He continued as treasurer of the Marathon Oil Co., successor to the Mid-Kansas and was made assistant treasurer and secretary of the parent company last year when the Marathon was absorbed by the Ohio.

He will continue to make his home here but he and Mrs. Cook expect to do considerable traveling for a time.

Cities Service President Dies

N. P. N. News Bureau

NEW YORK, June 28.—Frank R. Coates, president and director of Cities Service Oil Co., and an officer or director in 17 other large corporations, died at his home in Avon, N. J., June 26, after a long illness.

Coates, who celebrated his 69th birthday last week, was a native of Philadelphia and graduated from Lehigh University in 1890. He first worked in the engineering department of the Baltimore & Ohio railroad. After serving in the Spanish American war, he was made chief engineer of the Chicago, Great Western railroad, a position he held until 1904, when he left to enter the engineering and construction business.

Active In Toledo

Early in 1910 Coates was made vice president of Inter-Ocean Steel Co., Chicago, and the following year he was made president of the Toledo Railways and Light Co. He headed the Toledo Utility Co. when it was acquired by Cities Service in 1915. He remained influential in Toledo even after moving his offices to New York upon his election to Cities Service directorate 16 years ago.

Besides his connection with Cities Service companies, Coates, at the time of his death, was director of the Community Traction Co., the Tampico Texas Petroleum Corp., the Toledo Edison Co., the Interurban Station Co., the Mexico-Eastern Oil Co., and the Penn York Natural Gas Co.

He was a trustee of Lehigh University and had been president of the American Electric Railway Association and was a member of many technical societies. Surviving are his widow and one daughter.

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Virginia 'Gas' Tax Revenue Up

RICHMOND, Va., June 27.—Despite a slight decline in May collections, Virginia's gasoline tax revenues for the first five months of 1938 were 4.5 per cent above those for the same period last year, Division of Motor Vehicles reports.

Five-months collections this year amounted to $6,733,719.84, compared with $6,441,776.53 last year. May collection ($1,454,823.18) were 3.6 per cent below May, 1937 ($1,509,887.05), which the Division attributed to the fact there were not more than 10 days of clear weather in Virginia during the entire month.

Refining Technology

New Diesel Fuel Test; Metallurgists Develop New Lubrication Principle

By ARCH L. FOSTER, Technical Editor

AFTER five or six years of intensive study and co-operative work, at least four of those years without a sponsor, the doughty warriors under the leadership of T. B. Rendel, have developed a laboratory method for testing the ignition quality of diesel fuels. No mere overnight dream is this; no catch-penny development to inveigle the hapless bucolic purchaser to buy something he does not understand, and cannot use after he receives it.

Many branches of this testing road were followed out, before even a general system, a principle of testing, was agreed upon. Gadgets, apparatus, procedures were studied and tried at exhaustive length, some discarded, others improved upon. Now the group recently taken under the wing of the Co-Operative Fuel Research Committee, has presented a discussion and a proposed method, which is to be offered for the consideration of the C. F. R. in the near future. Adoption as a tentative standard of the industry and further intensive study by the American Society for Testing Materials probably will follow.

This new method determines the relative delay period, between the time fuel is injected into the cylinder of the diesel test engine and the instant combustion begins. This comparison will be reported in terms of Cetane Number, analogous in part to the octane number determinations on gasoline motor fuels. Results will be given in terms of the percentage of cetane, a hydrocarbon of the composition $C_{16}H_{34}$, in a mixture of cetane and alpha-methylnaphthalene which shows the same ignition performance in the test engine. Cetane has a very short ignition delay period; methylnaphthalene a very long delay period. This method of comparison is entirely analogous to that used in reporting octane numbers, except that i-octane and n-heptane, respectively high and low in anti-knock quality, are the reference fuels used in testing gasoline.

Details of the method have not been made public. We can rest assured, however, that the collaborators have developed a test which is not perfect but which is good, and that its use will do more than anything else to clarify the chaos into which the rating of diesel fuels, and the sale of these fuels under such ratings has fallen recently. The chaos resulted from the lack of such a standard, generally-agreed-upon test method. The method will be improved upon in the future. Use of the method in a short time will improve far more the conditions incident to the manufacture and sale of diesel fuels.

Making Steel Lubricate Itself

The heading is not quite correct, possibly, but it appears to express the import and the importance of the new Feritex process for treating friction surfaces, if the early promises of that process are found to be true, after exhaustive use and experience. If, by a simple chemical etching of steel surfaces which must be lubricated in engines, those surfaces can be made to show extreme pressure properties when lubricated with straight mineral oils; if time required for break-in of new engines is reduced thirty-fold or more; if wear during the normal life of the engine can be reduced to a small fraction of that experienced at present in especially heavy-duty engines, then our introductory statement is true in result if not in principle.

The parts to be "Feritexed" are simply cleaned and "dunked" in a chemical solution for a given time at a given temperature, washed and oiled. The etched surface so produced is said to retain oil film in the depressions produced by the selective solutions of various particles in the steel. Some engine makers are already testing the method.

●

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Shell's New Research Laboratory Ultra-Modern in Design R-312

The research laboratory is the pilot and the directional brains of the refinery, not so much for today as for tomorrow. Shell has built a laboratory for these purposes.

Packed Contact Tower Efficient in Solvent Treating Pennsylvania Lube Fractions by B. L. Heath and D. B. Williams ... R-318

A 500-barrel-per-day extraction unit operating on Pennsylvania bright stock, neutrals and cylinder stock operates up to 600 barrels per day with a ring-packed tower which equals eight-mixer-settler stages in efficiency.

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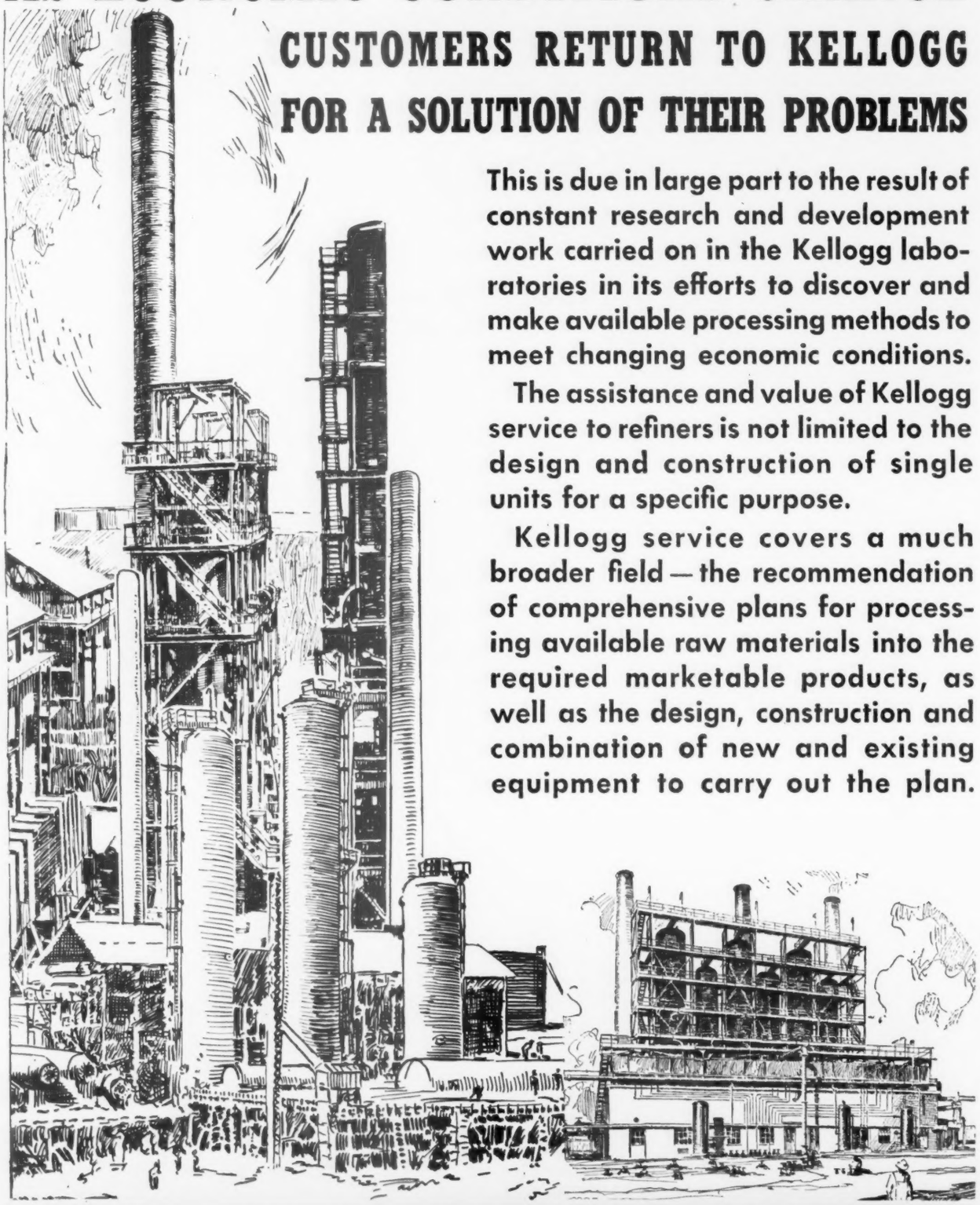
AS ECONOMIC CONDITIONS CHANGE

CUSTOMERS RETURN TO KELLOGG FOR A SOLUTION OF THEIR PROBLEMS



This is due in large part to the result of constant research and development work carried on in the Kellogg laboratories in its efforts to discover and make available processing methods to meet changing economic conditions.

The assistance and value of Kellogg service to refiners is not limited to the design and construction of single units for a specific purpose.

Kellogg service covers a much broader field — the recommendation of comprehensive plans for processing available raw materials into the required marketable products, as well as the design, construction and combination of new and existing equipment to carry out the plan.

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The "Assembly Line" at the SAE car assembling contest at White Sulphur Springs, June 15. Automotive engineers, leaders in their field, reverted to past experiences, and several teams completed the assembly of Bantam cars, and drove a "race" around a 150-yard "track." In the center midd'eground, wearing a white shirt and jockey cap, is Austin Wolfe, internationally kno..a consulting automotive engineer of New York, deep in study of what appears to be an ignition assembly tangle. The contest was won by the Cleveland team

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Fuel, Lubrication Research Goals Clarified By Recent Advances

By ARCH L. FOSTER, Technical Editor

AMONG the high spots of the summer meeting of the Society of Automotive Engineers in White Sulphur Springs, W. Va., June 12 to 17, probably the most far-reaching in its effect on the oil and automotive industries was the recent developments and conclusions reached by the co-operating engineers in gasoline anti-knock testing.

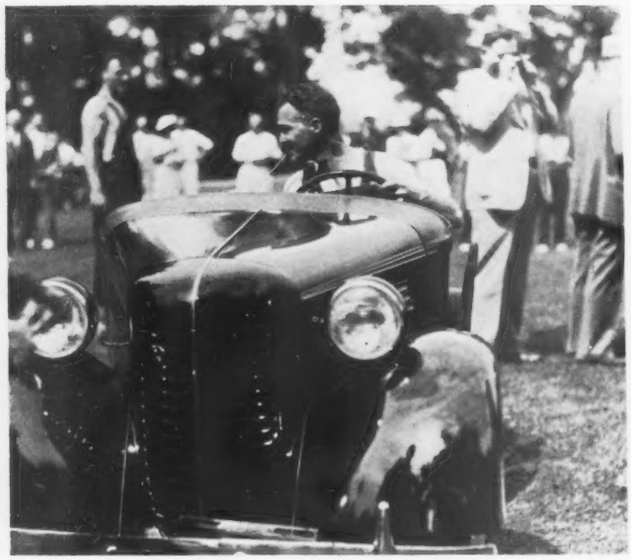
During the last six years and more, the preliminary work has been carried out, learning to determine what the relative knock ratings of motor fuels are. From the masses of data collected by five separate co-operative test programs, a number of conclusions have been reached by these engineers. These conclusions indicate clearly the stage to which knock testing has advanced and point out the complications involved in this extremely complicated problem.

Some of these important points are, as mentioned in this and other recent meetings; 1. The importance of the knock performance of fuels at full throttle is decreasing, and the results so obtained are not necessarily a criterion of the road performance of fuels. Since during the greater part of its operating time an automotive engine is driven at part throttle, that is between say, 20 and 50 miles per hour, engineers make every effort to improve fuel economy, engine power and performance at part throttle operation. This increases the difficulty of obtaining maximum economy or power at either full throttle or at very low speeds, especially at full throttle. It was pointed out recently (Greenshields, Hebl, and Rendel, A. P. I. May 24, 1938), that automatic spark advance mechanisms cannot be set to give maximum power at all speeds. In view of the nature of the problem it then behooves the engineer to strive for the top in part throttle performance and, inferentially, to make low speed and full throttle performance the best practicable without impairing the main consideration.

2. Fuel economy is so dependent on the manner of operating the individual car that only very wide variations in the setting of engine operating conditions could produce such extreme variations. J. B. Macauley of Chrysler Corp. pointed out one set of road tests carried out by his staff, in which a ten-mile course was laid out through downtown and suburban city traffic. This course involved traffic lights, congested and thin traffic areas and was designed to include all typical driving problems.

In one set of runs over this course, expert drivers were instructed to stay within speed limits and all traffic laws, but to rush up to red lights using brakes severely, to use the accelerator heavily to gain speed at the maximum rate when starting from lights, and to follow other practices which may be used by a normal driver attempting to make the best speed possible through traffic.

On the second set of runs, with the same cars, driv-



"Oldfieldesque" Mart. Chittick, Pure Oil Co. and driver for the Chicago team, pulls into the pit for a fresh cigar or maybe a match for the ignition.

ers, same engine settings and observance of traffic regulations, drivers approached red lights coasting, accelerated in a leisurely manner when "getting away" from lights and traffic obstructions. The miles per gallon obtained by the first or "rush" type of driving was 8½; for the more careful, leisurely driving, 17 miles per gallon or just twice the fuel mileage of the first. This difference was made purely in the *manner* of operating the car.

No respectable engineer would imply that so great a difference in mileage could be obtained merely by boosting the octane number by any reasonable amount, or by any but the most extreme differences in spark or other engine setting. These figures indicate that fuel economy is by all odds a matter for the adjustment of the engine, a job for the automotive engineer, other things being equal. This is another way of saying that superiority built into the fuel can only be realized in equipment designed and adjusted so as to take advantage of this inherent higher quality.

In the nature of the case, engineers say, engine *efficiency* is difficult to increase without increasing compression ratio. More power can be obtained by using a larger engine with lower grade fuel and a lower spark advance, but efficiency will suffer. Correspondingly, knock can be prevented by retarding the spark to a point where any given fuel does not produce a knock, but again efficiency suffers.

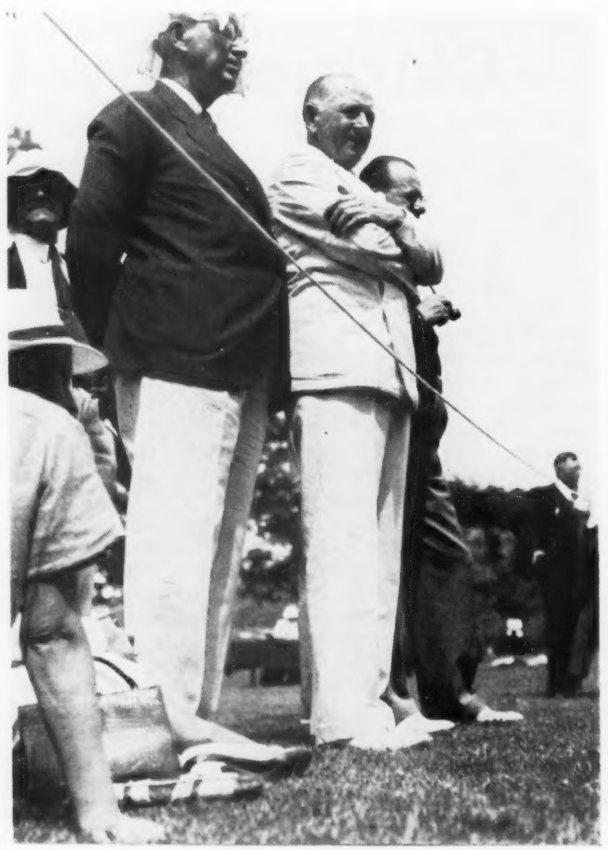
This last fact is illustrated by a study of road test data taken in five different co-operative test programs in the last several years. It is found (loc. cit.), that, as far as these data show, the cars on the road require the quality of fuel which is available to the purchasers of fuels; that is, by utilizing the flexible spark setting arrangement with which the car maker has thoughtfully fitted these cars, the average owner eventually has that spark adjusted to suit the fuel he can buy. Therefore the requirements of the nation's cars are the qualities of the fuels sold. The demands of motor cars in fuel quality have changed very little during the last several years, it is found. And by implication, the demand for improved quality for the immediate future may be expected to increase very slowly.

Significant indeed is the conclusion of J. R. Sabina's committee that we have no need for collecting more data of the kind which we now have in such exhaustive volume. In the data so far collected in road and laboratory tests too many variables, the effects of which on knock ratings now are known to be significant, were not taken into consideration. Atmospheric temperature, barometric pressure, air humidity are of considerable importance in determining knock ratings; so far little attention has been paid these factors by individual laboratories and none in co-operative studies. Including of these variables in future studies is apparently indispensable to any intelligent prosecution of knock testing research in the future.

Still more far-reaching in its implications is the proposal, which has been discussed and booted about for some time among the technologists involved, that two test methods be used in an attempt to determine laboratory ratings for fuels which will agree with, or at least show correlation with, road performances in most cars. This proposal has been made as a solution of the problem, a method for adoption by the CFR, the ASTM and the industry, to obviate some of the wide variations shown between road and laboratory ratings, variations so wide that test averages become misleading and probably should be used only for certain purposes.

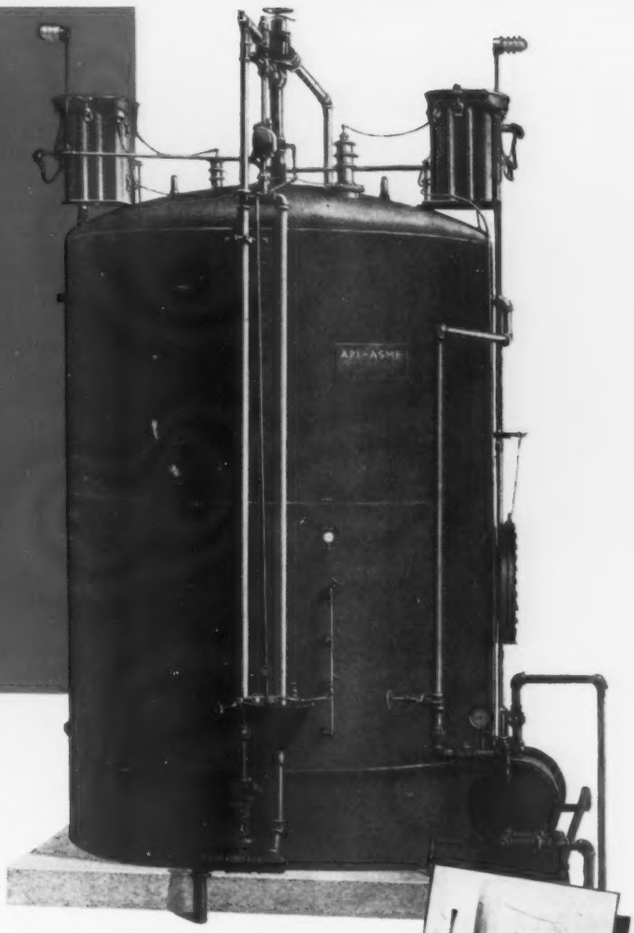
Graham Edgar sums up the situation in a very sane and broadminded manner in an honest recognition of the inherent difficulties of the knock rating problem, a recognition of the fact that we are asking more of a knock test, laboratory or road, than is possible to achieve with it. To establish by one test, Edgar points out in essence, the comparative knock rating values and performance of a fuel in any and all cars under any set of conditions, he implies, is impossible. We are asking more of a test that exists in the limitations of any test method. He said further, in part:

"The writer does not think it likely, therefore, that any better agreement with any single set of 'average road ratings' is apt to be possible in the future than was achieved in 1932, but it does appear likely that some method (or combination of methods) can be found which



A study in deep study. A. W. Burwell, Alox Corp. (left), and L. B. Helm, Standard Oil of Ohio (right, watching the scrambled efforts of the assembly teams at White Sulphur Springs

HAVING $ALT TROUBLE ?



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Another team of SAE engineers work frantically against time at the ignition system of the Bantam

will agree about as well as has been true in the past with any single set of road ratings, provided the range of fuel types and of octane numbers considered is not too wide."

The effect of atmospheric temperatures, barometric pressures, etc., on test ratings is possibly such that several sets of ratings under different conditions may be made in the future, and by some to-be-worked-out system a representative rating, applicable as a generalization in comparisons of fuel knock values, may be developed, which will take into consideration these numerous variables and enable the informed engineer to know, by ascertaining these ratings what the properties of the fuel are under any specified conditions. In fact, Edgar proposes two laboratory test methods, made under different sets of conditions, on which a flexible knock rating system may be built "which represents probably the best practical solution of a problem which, fundamentally, is not capable of complete technical solution."

By the last phrase, the speaker doubtless means the problem is incapable of the exactness and complete applicability which is indispensable in a really technical development, a fact patently true to those who have studied it. Many technologists and technically trained executives in the commercial and marketing fields, as well as many directly in the technical departments, are wondering audibly if this exactness is at all necessary for sales or comparative purposes, if in fact too much exactitude may not be a handicap. Edgar, again, points out that "all laboratory tests are primarily designed for the purpose of maintaining the specifications on the basis of which products are manufactured and sold, and this is definitely true of knock testing."

"Lube" Treating and Surface Treating

Technologists have already pointed out that, in testing diesel fuels, an exact numerical value for Cetane Number of these fuels is unnecessary, probably undesirable, and we should avoid too exact ratings for sales and general purposes. We remember a very few years ago salespeople were wont to base sales talks on fractional differences in octane number, when in reality the fancied difference in quality was less than infinitesimal. In passing, it is to be hoped that the use of the Cetane Number of diesel fuels, if and when adopted, will be free of this type of sales idiocy.

While it has not yet been proposed by the engineers, it may come about that the application of knock testing in the two branches of the industry where it is used will be on an entirely different basis, possibly even on entirely different tests or systems.

Two presentations on the subject of lubrication of automotive engines, made before the SAE at White Sulphur, appear at first glance to be an irresistible-force-immovable-object sort of proposition, yet that situation is imaginary rather than real. Bray, Moore and Merrill (Union Oil Co.), state that experience has shown the inadequacy of straight mineral oils to properly maintain safe lubrication of diesel engine bearings and lubricated surfaces. Soap-type additive agents have gone far in fortifying these mineral oils to stand the gaff and lubricate these heavy-duty machines, they point out.

However, Neely (Standard Oil Co. of Calif.), announces an entirely new and a startling development in the solution of lubricating problems of friction surfaces, based on metallurgy and chemical treatment, not of the oil but of the surfaces to be lubricated. This development is young yet, and long-shot prophecies are dangerous. Present indications show that this process may become a primary factor in the solution of many of our most troublesome lubrication difficulties.

By this method, it is claimed, chemically etched friction surfaces can be so conditioned as to possess the property of carrying extreme pressure loads when lubricated with straight mineral oil. Oil retained in the network of microscopic depressions in the friction surface and continually replaced avoids metal-to-metal contacts and consequent scuffing and failure. Already one large engine manufacturer has used the process for a year on his production, with signally successful results, we are told.

Soap-type addition products have assuredly solved some of the heavy-duty lubrication problems; their use is growing continually. They are claimed to prevent ring-sticking, scuffing or galling, to reduce wear considerably and to possess admirable crankcase stability in long service. Most, probably all, of these claims have been well substantiated, engineers believe.

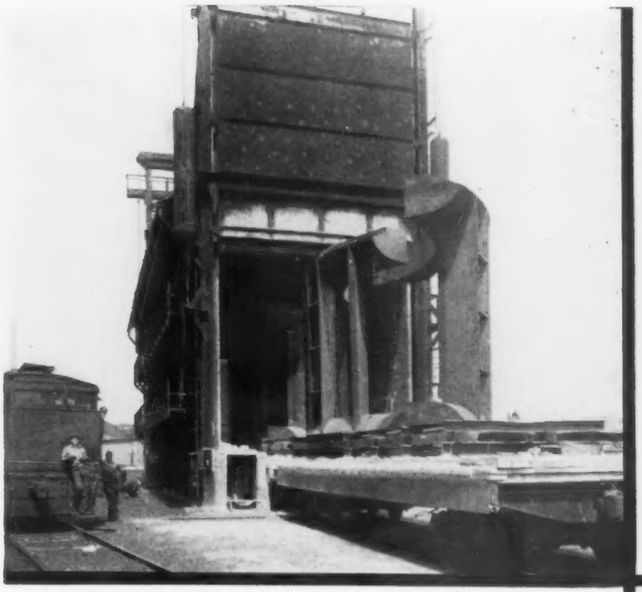
In the prevention of scuffing — one of the three major devils in the engine operators chamber of horrors — Bray and his colleagues state that the efficacy of additive agents is probably through their quality as an anti-welding agent which prevents the instantaneous seizure of small, probably high or protuberant portions of the metal surface. When such seizure takes place these particles then become an abrasive to cut out the surface and start scuffing.

However, a serious drawback to the use of these additives is that at least the soap type are almost universally corrosive to the alloy types of hard bearings, such as those containing copper-lead, cadmium and such newer types; little if any corrosion of babbitt bearings occurs. Bray states that these additives must be made non-corrosive to such bearings before they become generally applicable.

However, if chemical treatment of friction surfaces proves eventually to be generally successful and applicable, it is highly probable that we shall have conditions so improved that only non-corrosive additives, if any at all, will be necessary to carry the heavy-duty bearing loads of the diesel and other type engines of the future.

FURTHER DETAILS ON "FERITEX"

On page 25 of this issue will be found an article describing the new Feritex chemical process for treating steel surfaces to aid in their lubrication, the first announcement of which in oil journals was made exclusively in the June 22nd issue of NATIONAL PETROLEUM NEWS. Developed by the research staff of a California oil company, this new process, it is believed, will have a most important future bearing on the lubrication of surfaces carrying the pressures encountered in the operation of automotive engines.



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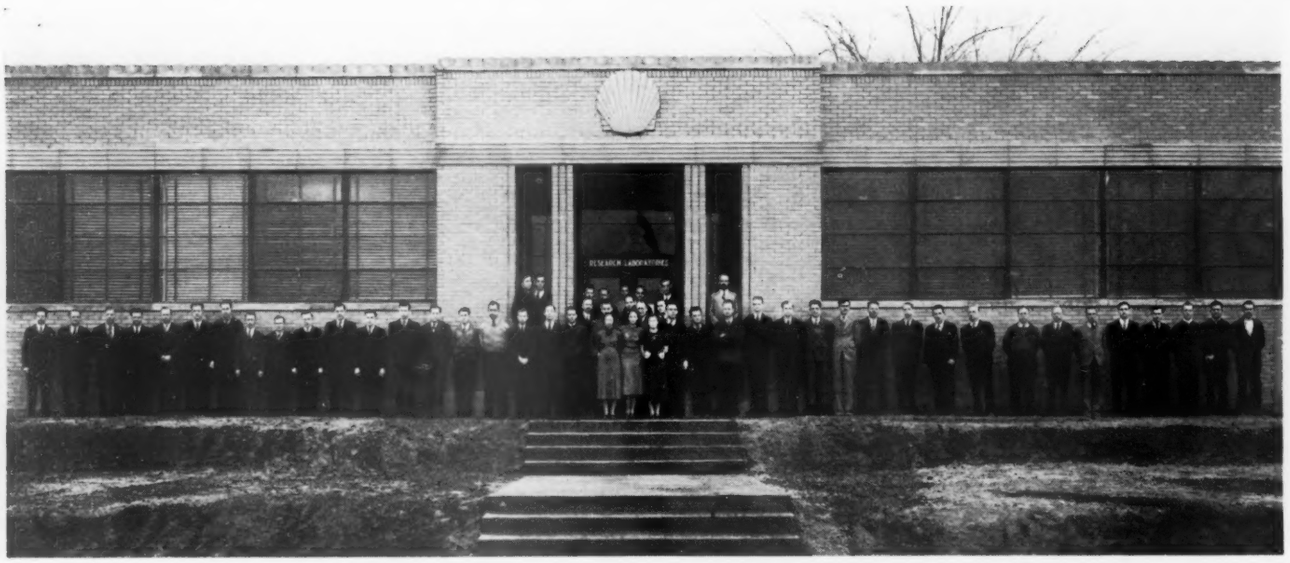

Front of the research laboratories and the staff which carries on the work

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Shell's New Research Laboratory Ultra-Modern in Design

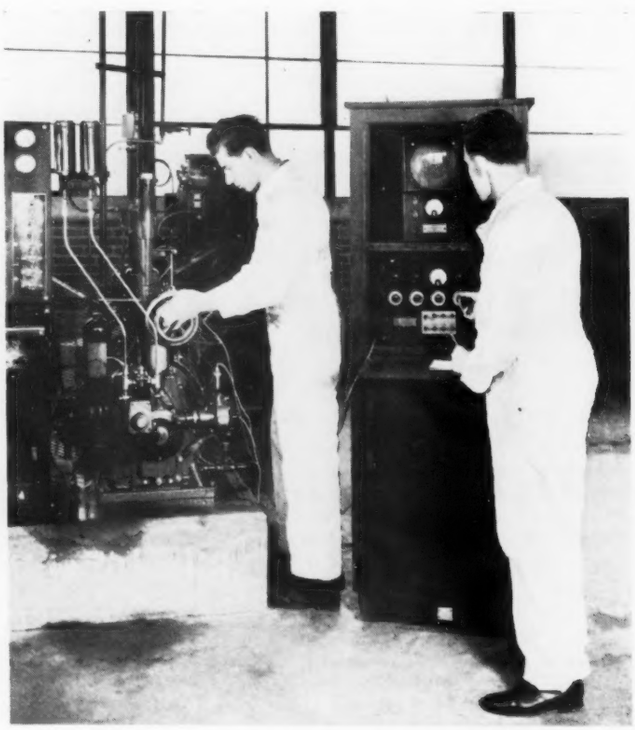
NO MORE CONCLUSIVE PROOF of the change of attitude of oil company executives toward research during the last 20 years is needed than a survey of the number of large laboratories established in recent years, the amounts of money spent to build and operate them—and the revolutionary technical advances which have come out of them.

Now recently has been added to this fast-growing list of fact-factories the imposing new research laboratories of Shell Petroleum Corp., which started operation early in January, alongside the refinery at Wood River, Ill. Divided into two main departments, this laboratory heads the research, experimental and development work of Shell Petroleum. The Engine Research Section is headed by T. B. Rendel and F. L. Garton, with L. E. Hebl as assistant director. The Oil Research Section is under the direction of Dr. K. R. Edlund, recently of Shell Development Co.'s laboratory in Emeryville, Calif.

Each section or department is divided into five sections. The Engine Research is subdivided into chassis dynamometer and road test section; gasoline engine section; diesel engine section; aero engine section and the standardization test section. Oil Research is also arranged in five sections, pilot plant, light oils, heavy oils, entomological and analytical sections. The analytical section is in the position of a service organization to the other sections of the laboratories. The pilot plant section is located inside the refinery area, operated by the research department and is used for developing new processes as well as improving old processes.

The major details of the layout and system of the laboratories is shown in Fig. 1, floor plan of the building. The establishment is 162 feet in frontage; the chemical wing is 117 feet in depth by 41½ feet wide and also occupies approximately half the frontal space. The engine wing is 147 feet deep by about 31½ feet wide. The offices, stenographic staff, technician's shop and library are located in the main front section of the building. The building is ventilated by a system of air ducts so arranged that air conditioning can be installed at a later date.

The engine section is divided into repair room or shop, the "small engine" room, the "large engine" room and the "aero engine" room. The most complete provision is made for supplies of water, steam, gas, fuels, in any position



Knock testing research is a large part of the work of the engine laboratory; this shows a knock testing assembly and crew at work

A Chemical Process- Without Chemicals!

These words are often used to describe the Gray Clay Treating Process. It is a really accurate description because the Gray Process removes objectionable unsaturated hydro-carbons from cracked gasoline by polymerization. The result is achieved more effectively, efficiently and economically and with less loss of either original volume or octane rating than any other treating process.

Gray Clay Treating units operate on a basic principle which makes them an integral part of the over-all cracking and treating process. They require only negligible supervision and maintenance, consisting principally of routine laboratory checking of quality of products and infrequent changing of clay.

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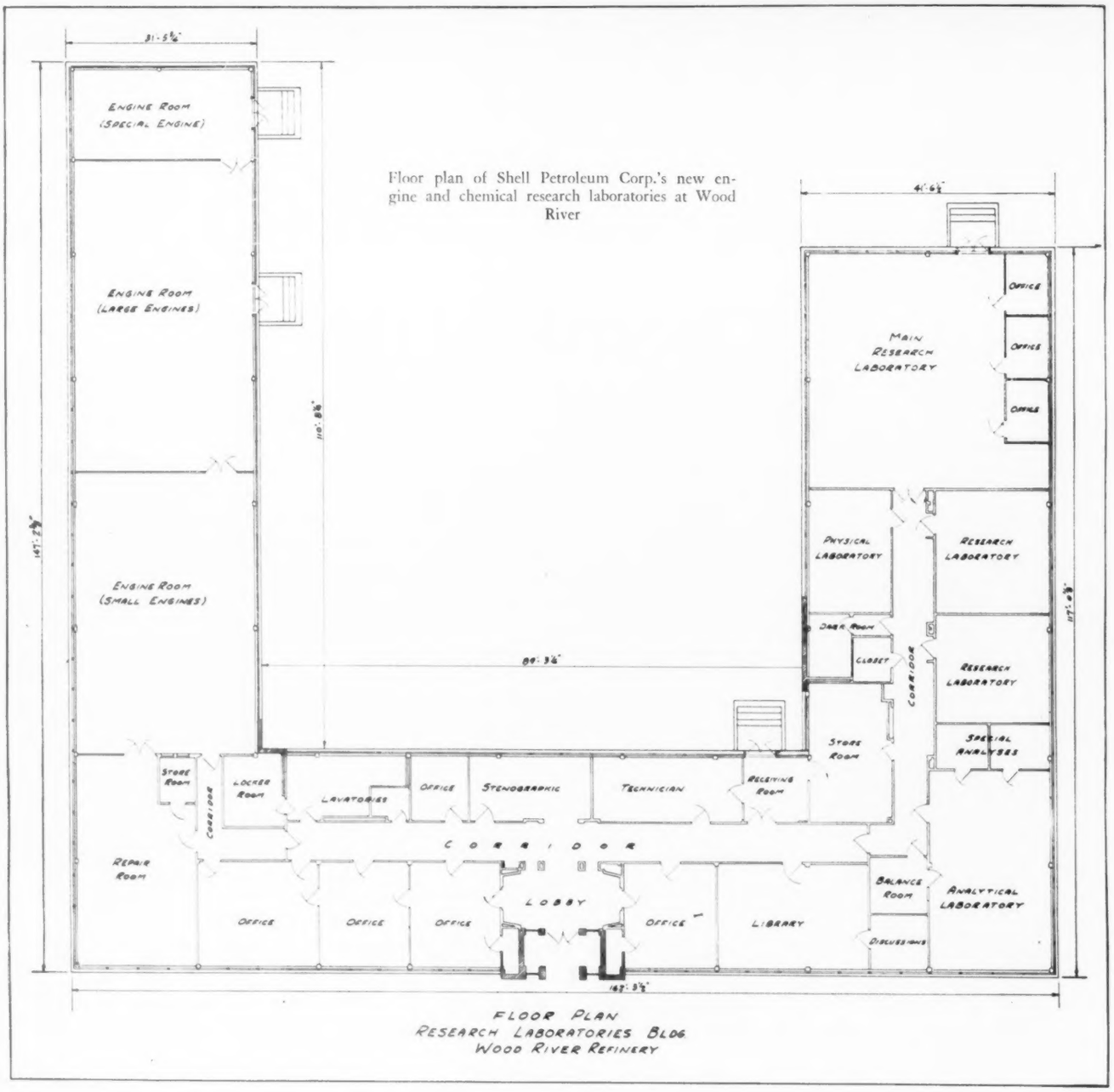
T. B. Rendel and F. L. Garton, associate directors of the Engine Research Laboratories

Floor plan of Shell Petroleum Corp.'s new engine and chemical research laboratories at Wood River



K. R. Eklund, director of the Chemical Research Laboratories at Wood River

which may be needed for any experimental installation. Throughout the laboratory the window space is practically the entire outer wall space.

The oil section includes store room and dark room, analytical and physical laboratories, two smaller research rooms and the main research laboratory. In the latter office rooms are grouped in one area, leaving the main body of the room free for laboratory desks and apparatus assemblies. In each laboratory, in addition to the conventional laboratory desks, the grid type of skeleton support for apparatus is installed, consisting of horizontal and vertical steel rods at regular intervals, welded or clamped together at intersection points. Practical experience has shown that this type of support for laboratory equipment, occupying small space and of low cost is most convenient for any installation schemes of the resourceful research chemist.

The oil research sections are each headed by a senior research chemist, with a varying number of assistants and aids for the study of specific problems assigned to each section.

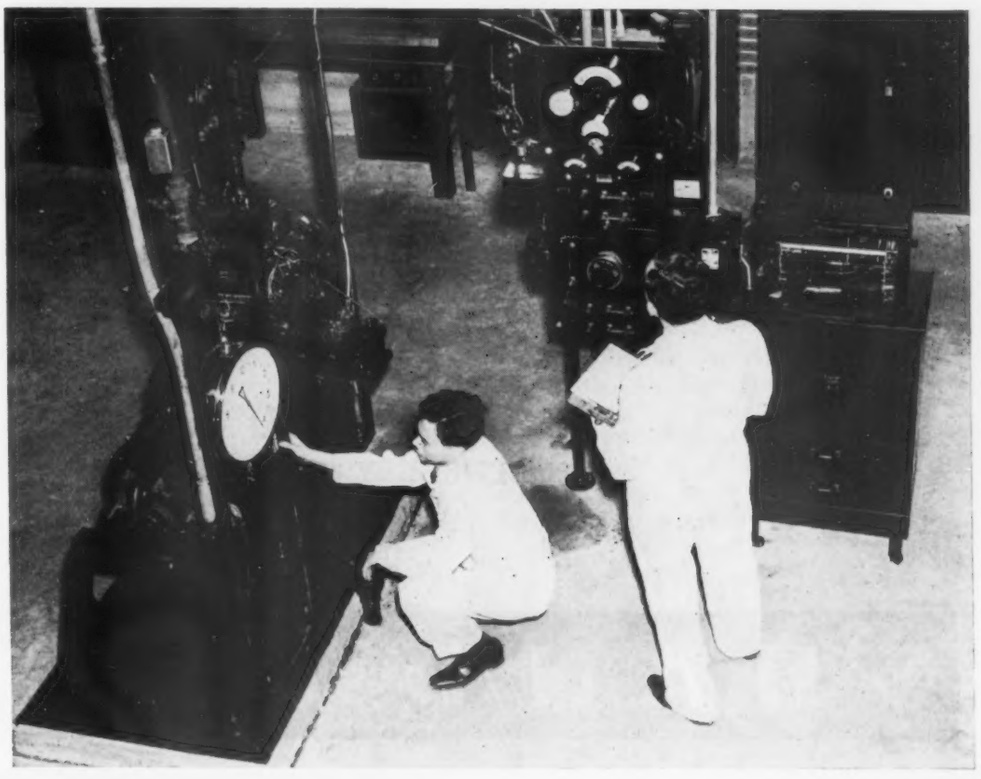
In the engine section are included six experimental single cylinder engines of the C.F.R. type for use in studying all kinds of fuel and lubricant problems concerned with both gasoline and Diesel engines. One of these engines is used to standardize all other C.F.R.—ASTM test engines operated by the group of Shell companies, and another is used for miscellaneous octane number testing. Two test beds and dynamometers are installed for automotive gasoline and Diesel engines, along with the assemblies of control and recording instruments necessary for their operation. Various engines will be installed on these beds from time to time; at present an 8-cylinder and a 6-cylinder engine are being used for test purposes.

Two commercial diesel engine-dynamometer assemblies are in operation. One is a Fairbanks-Morse single cylinder 4¼ inches x 6 inches used mainly for experimental work on ring-sticking and fuel development problems. It is fitted completely for temperature measurements, and even the actual temperatures of the piston ring grooves are measured by thermo-couples, using a special guide inside the engine case to support and protect the wiring.

An S.A.E. and a "Four-Ball" extreme pressure lubricating oil testing machine are employed in testing and development work on hypoid lubricants. Among other equipment are a Wiedenhoff ignition timing analyzer unit, for the complete analysis of any make of ignition timer; equipment for studying fuel injection pump and injection valve characteristics, indispensable in any research on fuel injection engines and their fuels. Photographic equipment for use in photographing engine parts as a part of research investigations is provided. A cathode-ray oscillograph is installed as one of the most forward-looking steps in providing the best practicable equipment.

The entomological laboratory is housed separately from the main group; it of course carries on continuous experimental work on development and improvement of insecticides and oil sprays of numerous types and purposes.

In a glass-blowing and instrument shop is manufactured



Engine-dynamometer test unit and crew, engine laboratory

The Ideal Combination for Conservation and Safety

Shown here is the S. & J. Weatherproof Breather Valve, mounted on an S. & J. Flame Arrester, an ideal combination for the conservation of both gases and money. The breather valve is considered purely as a utility device, but when combined with the S. & J. Flame Arrester, a factor of fire safety is added. Protection against fire is always good business, and in addition to the problematical, its installation in most sections begins to pay cash dividends right away through credits in insurance rates. A flame arrester, approved by the Underwriters Laboratories, is always requisite to lower fire insurance premiums.

The S. & J. Flame Arrester and Breather Valve are companion equipment—designed to go together—and therefore present no installation difficulties as when separate units are bought from different manufacturers. Flanges match up, bolt holes line up, everything fits perfectly.

S. & J. manufactures a complete line of breathers for conventional low pressure refinery storage, for spherical and spheroidal tanks, and for bulk station storage. They are available in a complete range of sizes from 2″ to 10″. The S. & J. Flame Arrester is also made in the same sizes and each size is listed by Underwriters Laboratories. Descriptive leaflets on breather valves and flame arresters are available on request.

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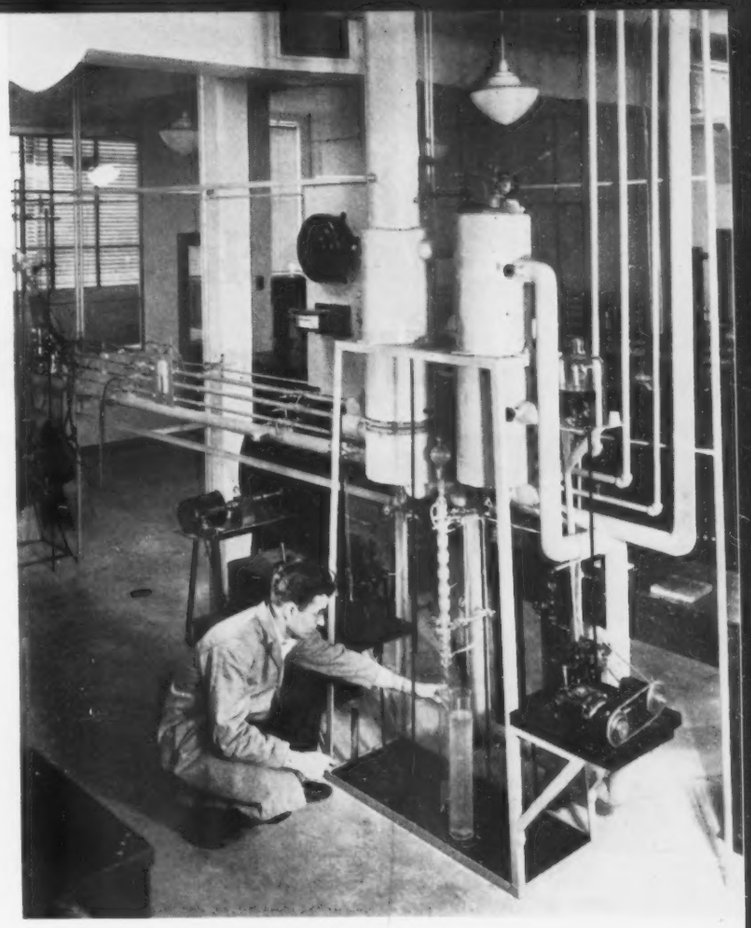
the intricate glass equipment needed in any aggressive research laboratory, most of which cannot be purchased as commercial equipment because of the myriad demands of the researcher for special types of glassware. Instruments are made and repaired in the same shop. Machine-shop facilities are supplied by the main shops in the refinery nearby.

In the engine laboratory the purposes and objectives are well defined also, and these objectives include standardization work on knock rating methods, for all company laboratories; study of new engine design developments and their influence on fuels and lubricants requirements of the future. Because road tests are interfered with greatly by traffic rules, traffic congestion, etc., a chassis dynamometer and cold room installation has been set up, wherein the entire car is anchored by front and rear axles, and the engine is connected through the rear wheels, which rest on a roller arrangement, to the dynamometer. In this manner the engine speeds, loads, etc., such as might be experienced in any sort of road operation can be reproduced exactly, can be varied within any practical limits, and conditions in all comparative tests can be reproduced with far greater exactness than is the case on the road. By fans, auxiliary air heaters, and other equipment wind temperatures, velocities and other outdoor conditions may be reproduced and controlled at will. Also, instrumentation can be much more complete and records made much more fully than in road work; however, considerable road testing is also carried out as a check on actual service performance of fuels and lubricants.

Starting tests and warming-up studies are made in the cold room, where atmospheric conditions can be set at will at any predetermined set of values; effects of wind can either be eliminated or varied under definite controlled conditions. Acceleration tests cannot now be made on the chassis dynamometer but all other tests and studies can be carried out under conditions controlled with practical exactness, the heads of these laboratories point out.

The entire staff, clerical and technical, of the Oil and Engine laboratories is now about 65.



Experimental fractionating installation, chemical laboratory

Starting as a tool dresser 34 years ago in California, Lloyd Williamson is now vice president and general manager of California Star Oil Co., pioneer oil producing company. Recently he was elected president of the Oil Producers Agency of California

Eastern States Modernizes

NEW YORK, June 28. — Having completed the modernization of its 10,000 barrel-per-day refinery at Houston, Texas to conform to the type of operations required under Gasoline Products Co. license, Eastern States Petroleum Co. has contracted for a more liberal license arrangement with Gasoline Products. The new agreement has been signed, by W. H. Sullivan, president of the licensing company, and by D. W. Armstrong, vice president of Eastern States.

A large portion of the gasoline produced in this refinery is made by cracking, and the license includes rights under the Behimer so-called "clean circulation" patents owned by The Texas Co. The modernization program started early in 1937 when Eastern States acquired limited license rights with Gasoline Products. Engineers of the latter company have supervised the re-arrangement of the refinery, with the result that increased yields have been obtained, Eastern States officials report.

Dr. Price Heads Geology Department

MORGANTOWN, W. Va.—Board of Governors of West Virginia University has announced the appointment of Paul H. Price, state geologist, as professor and head of the Department of Geology. Mr. Price continues to serve as state geologist also.

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Packed Contact Tower Efficient in Solvent Treating Pennsylvania Lube Fractions

By B. L. HEATH* and D. B. WILLIAMS**

ABSTRACT

A 67-foot, ring-packed contact tower equals eight mixer-settler stages in efficiency for extraction of Pennsylvania lubricating oil fractions. More than one unit of Viscosity Index improvement is shown for each per cent of extract removed from the oil. Under the most efficient operation the extract is a semi-solid with specific gravity greater than 1 when treating bright stock, for example. Conradson Carbon Residue is reduced on cylinder stock to about one-half the original value.

LAST year, a counter-current extraction tower was installed in the Chlorex plant operated by the Freedom Oil Works Co., Freedom, Pa., supplanting a four stage system of settlers and mixers previously used for contacting the oil and Chlorex. The unit has performed satisfactorily on various Pennsylvania lubricating stocks at or above charging rate for which it was designed.

The tower is 5′ 6″ in diameter and 67′ high and is insulated to prevent heat losses when operating at temperatures above atmospheric. The tower is packed with 1″ O.D. carbon Raschig rings. There are four packed sections with resettling zones between. Settling zones are also provided at the top and bottom of the tower. There are eight flanged manholes vertically located on the tower. The interface between the oil and Chlorex can be maintained at any desired point by moving the single float control to anyone of the eight positions. The tower has been operated with the interface maintained at both the top and bottom of the tower. The method of operation is shown in the flow diagram, Fig. 1.

Chlorex is pumped under flow control through a set of coils which can be operated either as a heater or cooler depending whether steam or water is circulated. Chlorex then enters the top of the tower above the upper packed section. Oil is charged under flow control to an orifice mixer where it is mixed with the extract solution which is pumped from the bottom of the tower. The extract solution breaks the viscosity of the charge oil, and facilitates heat exchange as the mixture of oil and extract solution passes through a cooling coil and into settler B where two phases separate. The extract phase from settler B is pumped through a cooler and into settler A. Further cooling between settlers B and A causes some raffinate solution to separate in settler A. This cycle oil combined with the raffinate solution from settler B is charged to the bottom of the tower and ascends countercurrent to the descending Chlorex. Final extract solution is pumped under float control from the bottom of settler A to a surge tank and from there is fed at a constant rate to the distillation unit where the Chlorex is stripped from the oil continuously under vacuum. The raffinate solution flows from the top of the tower through a surge tank to the raffinate stripping unit. It was found that approximately eight hours were required for the system to come to equilibrium when treating neutral and bright stock, and fifteen to twenty hours when treating steam refined cylinder stock.

Pennsylvania neutral, unfinished bright stock, and steam refined cylinder stock have been treated in this system. Results secured on various stocks over extended periods of continuous operation have shown that the system is equivalent to approximately eight stages. During one two-months operating period, samples were secured from various points in the system when charging bright stock, neutral and steam refined cylinder stock. The results secured when treating neutral having a viscosity of 160 Saybolt Universal Seconds

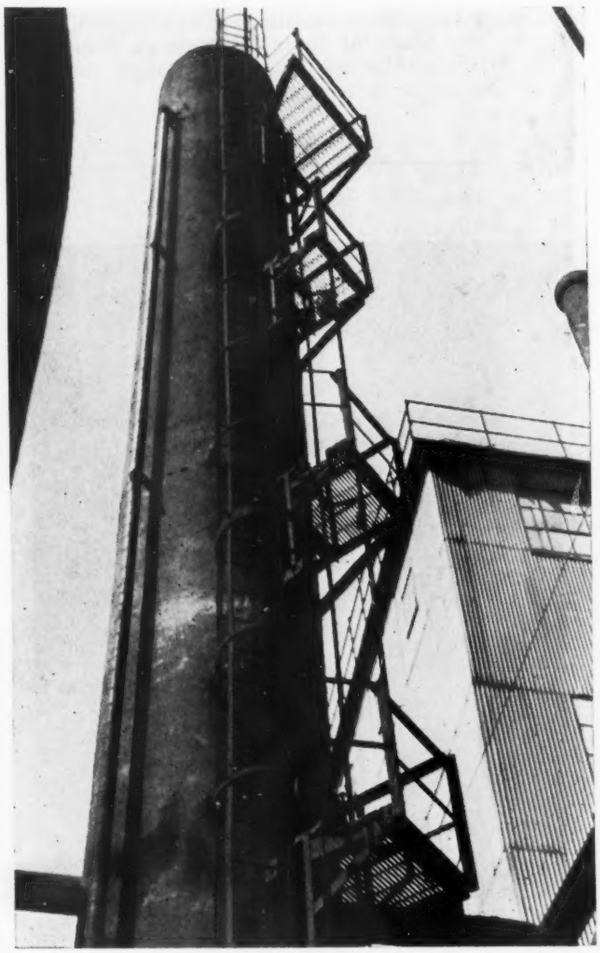

Fig. 1. Carbon-ring packed contact tower in Freedom Oil Works Co.'s Chlorex extraction unit, wherein lubricating fractions and extraction solvent are contacted. This tower is 67 feet high by 5½ feet diameter

*Freedom Oil Works Co., Freedom, Pa.
**Carbide and Carbon Chemicals Corp., New York, N. Y.

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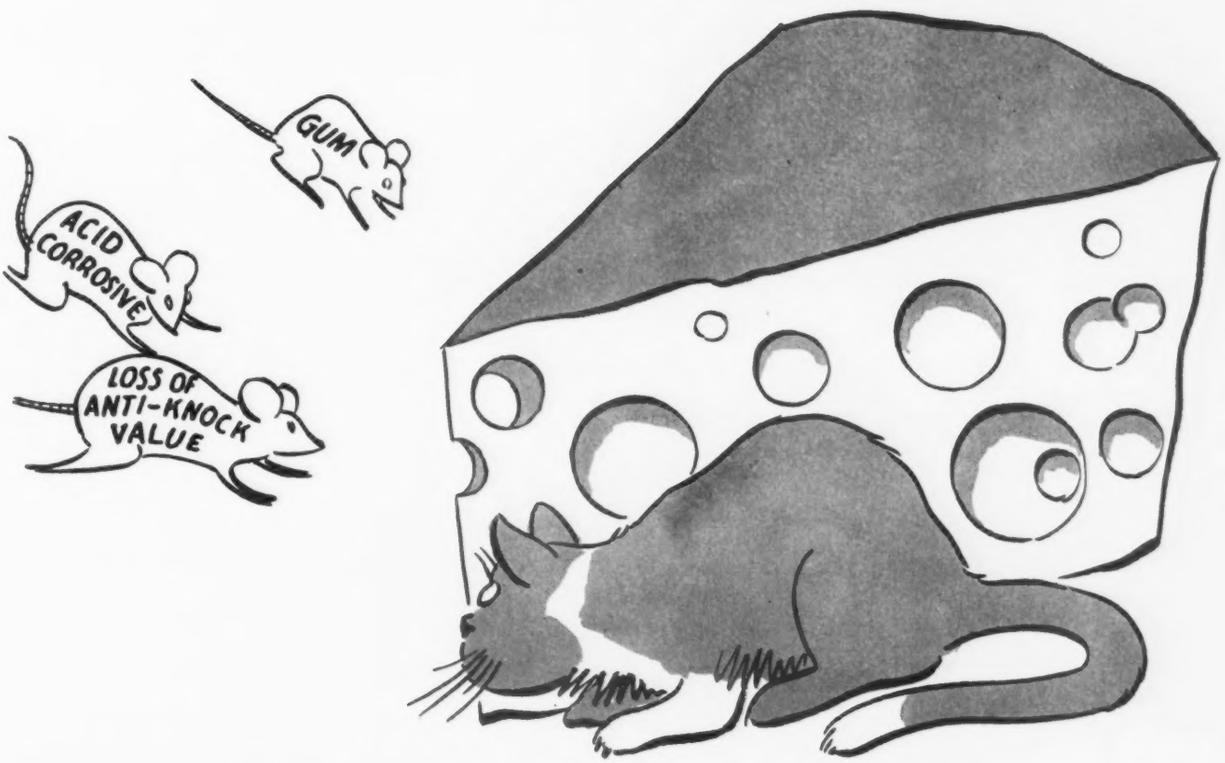

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GASOLINE ANTIOXIDANTS

TABLE 1

Chlorex Extraction of Pennsylvania Neutral in Counter-Current Tower

(Chlorex-oil interface at top of tower)

Charging Rate 800 Bbls. per day
Ratio, Chlorex: Neutral 0.581:1.0
Temp. Extract Solution from Settler A ..... 70°F.
Temp. Raffinate Solution from Tower ..... 90°F.

Sample No.	Inspections	Vol. % Raff. Yld.	°API Grav.	Vis./ 210°F.	*93.5 Vis./ 100°F.	Visc. Index	VGC
1	Charging Stock		31.2	44.0	163.8	96.3	.815
2	Raff. Soln. going to Tower		31.1	43.99	162.8	97.5	.816
3	Raff. Soln. ¼ up Tower		31.3	43.92	161.7	97.5	.815
4	Raff. Soln. ½ up Tower		31.4	44.27	166.0	98.9	.813
5	Raff. Soln. ¾ up Tower		31.7	43.93	160.0	100.0	.812
6	Raff. Soln. Top Tower		32.3	43.50	151.7	103.3	.809
7	Extr. Soln. ¾ up Tower		19.7	52.61	456	25.8	.887
8	Extr. Soln. ½ up Tower		18.4	53.62	511	15.7	.896
9	Extr. Soln. ¼ up Tower		17.6	53.67	519	12.9	.903
10	Extr. Soln. Bottom of Tower		17.3	54.74	579	3.1	.905
11	Extr. Soln. Settler B		16.2	56.23	652	—4.2	.912
12	Extr. Soln. Settler A		15.7	56.70	707	—17.0	.918

*Viscosities were determined with the Fitzsimons suspended level viscosimeter; kinematic viscosities converted to Saybolt by the A. S. T. M. formula; D342-321.
Viscosity Indexes from Dean, Lapyrouse and Davis tables.

at 100° F. are given in Table 1. During this run the tower was operated for ten days at a charging rate of approximately 800 barrels per day using a 0.581 to 1 ratio. When treating neutral the interface level was maintained at the top of the tower, with Chlorex as the continuous phase and oil as the dispersed phase. These results show an improvement in Viscosity Index of 7 V. I. numbers with a raffinate yield of 93.5%, or better than 1 V. I. per percent extract removed. The low gravity of the final extract is an index of the efficiency of extraction.

Results secured when treating Pennsylvania bright stock with the interface at the top of the tower are given in Table 2. This run was made when charging bright stock at the rate of 500 barrels per day, although charging rates up to 800 barrels per day have been maintained without difficulty. Three ratios of Chlorex to oil were used, 0.5:1; 0.802:1; and 1.5:1. The progressive improvement in the physical characteristics of the raffinate solution at various points up the tower is clearly demonstrated. With all three ratios the specific gravity of the final extract was greater than 1, indicating a minimum amount of "good" oil lost in the extract. These extracts were semi-solid at room temperatures. A similar run on bright stock was made with the interface control moved to the bottom of the tower. The data from this run is given in Table 3. Chlorex-to-oil ratios were identical with the previous run. It is apparent from Table 3 that the

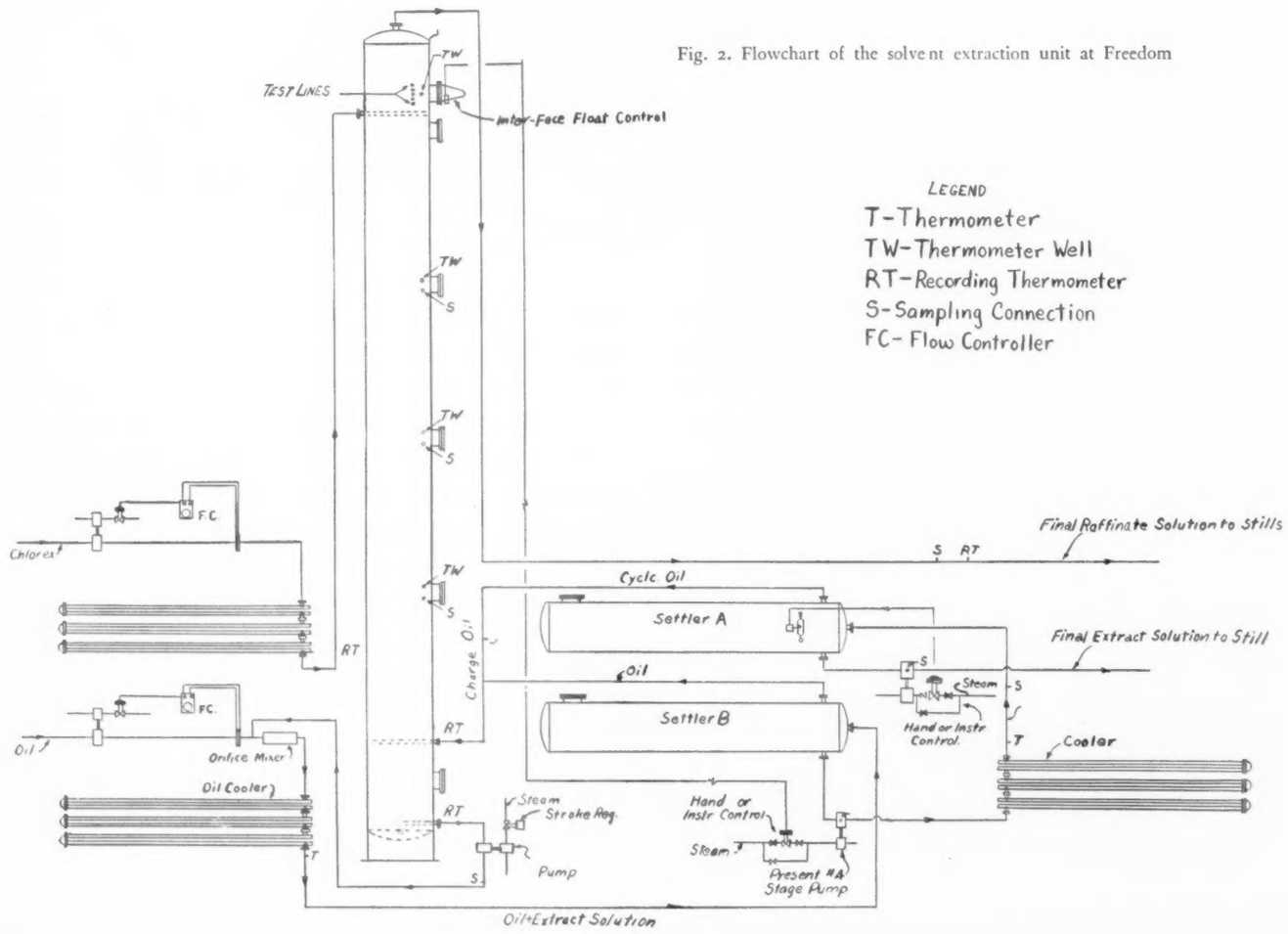


Fig. 2. Flowchart of the solvent extraction unit at Freedom

TABLE 2

Chlorex Extraction of Pennsylvania Bright Stock in the Counter-Current Tower

(Chlorex-oil interface at top of tower)

Charging Rate 500 Bbls. per day			
Ratio, Chlorex: Bright Stock	0.5:1.0	0.802:1.0	1.51:1.0
Temp. Extract Solution from Settler A	(65-70) °F.	(70-75) °F.	(70-75) °F.
Temp. Raffinate Solution from Tower	76° F.	80° F.	74° F.

Vol. % Raff. Yld. Sample No.	Inspections	**97.5 °API Grav.	Vis./ 210° F.	Vis./ 100°	Visc. Index	VGC	**96.9 °API Grav.	Vis./ 210° F.	Vis./ 100°	Visc. Index	VGC	**95.8 °API Grav.	Vis. 210° F.	Vis. 100°	Visc. Index	VGC
1	Charging Stock	26.7	153.1	2380	100.6	.807	26.7	153.2	2378	100.7	.807	26.7	152.8	2371	100.7	.807
2	Raff. Soln. Going to Tower	26.6	152.6	2304	102.5	.807	26.8	150.4	2285	101.4	.806	26.9	149.3	2234	102.7	.805
3	Raff. Soln. ¼ up Tower	*	*	*	*	*	27.1	147.7	2159	103.2	.804	27.4	147.0	2113	104.1	.802
4	Raff. Soln. ½ up Tower	*	*	*	*	*	27.2	146.9	2135	103.1	.803	27.6	146.4	2101	104.1	.801
5	Raff. Soln. ¾ up Tower	*	*	*	*	*	27.5	146.3	2106	103.7	.801	27.8	147.6	2098	104.8	.799
6	Raff. Soln. Top of Tower	27.2	147.9	2152	103.4	.803	27.3	146.6	2114	103.7	.802	27.6	145.7	2075	104.3	.801
7	Ext. Soln. ¾ up Tower	11.1	936	*	—33	.910	12.3	664	*	—23	.905	13.4	513	*	— 8	.897
8	Ext. Soln. ½ up Tower	10.4	1054	*	—42	.915	12.2	630	*	—23	.905	12.5	638	*	—19	.903
9	Ext. Soln. ¼ up Tower	9.8	1143	*	—52	.920	12.1	658	*	—25	.906	12.2	646	*	—23	.905
10	Ext. Soln. Btm. of Tower	9.1	1431	*	—58	.923	11.2	799	*	—37	.912	*	*	*	*	*
11	Ext. Soln. Settler B	8.3	1774	*	—70	.929	11.2	822	*	—34	.911	10.6	966	*	—42	.915
12	Ext. Soln. Settler A	7.8	1999	*	—75	.932	9.7	1216	*	—52	.920	9.2	1383	*	—58	.923
13	Cycle Oil from Settler A	26.5	143.7	2147	100.7	.809	*	*	*	*	*	26.7	141.9	2095	101.0	.807

*Insufficient sample for inspections.
**Viscosities were determined with the Fitzsimons suspended level viscosimeter; kinematic viscosities converted to Saybolt by the A. S. T. M. formula; D341-32T; Viscosity Indexes from Dean, Lapyrouse and Davis tables.

tower operated more efficiently with the interface at the bottom. For instance, with a 0.802:1 ratio the gravity of the final extract was 9.7° API with the interface at the top of the tower and only 7.9° API with the interface at the bottom, i.e., a poorer quality extract resulted in the latter case, in spite of the fact that more extract was removed. Filter yields for 7 NPA color on finished bright stock were 34% greater after extraction with a 1.5:1 ratio, over the original stock.

Steam refined cylinder stock was charged to the tower with the interface at the bottom at the rate of 500 barrels per day. Results secured in this run are shown in Table 4. Chlorex-to-oil ratios of 1½:1 and 2:1 were used. In order to handle this wax bearing stock in the tower it was necessary to maintain temperatures up to 158° F. at the top of the tower when using the lower ratio. Under the temperature conditions given in Table 4 no operating difficulties were encountered with steam refined cylinder stock at charging rates up to 600 barrels per day. The tower was originally designed to handle 500 barrels per day. The results secured in the tower when treating steam refined cylinder stock were identical with laboratory results secured with eight stage batch counter-current apparatus. The reduction in Conradson carbon residue and increase in percolation yield when treating this stock in the tower are shown in Table 4.

Conclusions

Conclusions which can be drawn from commercial operation of this counter-current tower with Chlorex are:

TABLE 3

Chlorex Extraction of Pennsylvania Bright Stock In Counter-Current Tower

(Chlorex-oil interface at bottom of tower)

Charging Rate 500 Bbls. per day			
Ratio, Chlorex: Bright Stock	0.5:1.0	0.802:1.0	1.5:1.0
Temp. Extract Solution from Settler A	71° F.	71° F.	72° F.
Temp. Raffinate Solution from Tower	95° F.	90° F.	94° F.

Vol. % Raff. Yld. Sample No.	Inspections	96.7 °API Grav.	C.C. Res.	*Vis./ 210° F.	Vis./ 100°	Visc. Index	VGC	93.6 °API Grav.	C.C. Res.	*Vis./ 210° F.	Vis./ 100°	Visc. Index	VGC	93.7 °API Grav.	C.C. Res.	*Vis./ 210° F.	Vis./ 100°	Visc. Index	VGC
1	Charging Stock	26.7	1.71	156.3	2441	101.1	.806	26.7	1.71	156.6	2457	100.9	.806	26.7	1.71	156.3	2446	100.9	.806
2	Raffinate Solution Going to Tower	26.7	...	156.2	2415	101.7	.806	26.8	...	156.3	2433	101.3	.805	26.9	...	153.6	2358	101.6	.805
3	Raffinate Solution ¼ up Tower	26.8	...	155.0	2399	101.4	.805	26.8	...	155.1	2393	101.6	.805	27.2	...	151.9	2292	102.2	.803
4	Raffinate Solution ½ up Tower	26.9	...	153.6	2327	102.3	.805	26.9	...	153.6	2332	102.2	.805	27.3	...	151.1	2267	102.4	.802
5	Raffinate Solution ¾ up Tower	27.1	...	152.3	2268	103.0	.803	27.1	...	152.2	2296	102.4	.803	27.5	...	149.2	2192	103.2	.801
6	Raffinate Solution Top of Tower	27.4	1.38	150.2	2213	103.2	.801	27.5	1.36	148.5	2145	104.1	.801	27.9	1.22	146.5	2062	105.1	.798
7	Extract Solution, Bottom of Tower	10.1	...	1113	....	—46	.917	10.7	...	972	....	—38	.913	12.3	...	773	....	—18	.902
8	Extract Solution From Settler B	9.6	...	1197	....	—53	.921	9.3	...	1149	....	—60	.924	11.5	...	674	....	—35	.911
9	Extract Solution, From Settler A	7.8	...	2129	....	—73	.931	7.9	...	1591	....	—80	.934	9.6	...	1313	....	—52	.920
10	Cycle Oil From Settler A	26.1	...	143.7	2240	98.0	.812	26.2	...	147.0	2255	100.0	.810	26.2	...	142.2	2219	97.5	.811

*Viscosities were determined with the Fitzsimons suspended level viscosimeter; kinematic viscosities converted to Saybolt by the A. S. T. M. formula; D341-32T.
Viscosity Indexes from Dean, Lapyrouse and Davis tables.

TABLE 4

Chlorex Extraction of Pennsylvania Steam Refined Cylinder Stock in the Counter-Current Tower

(Chlorex-oil interface at top of tower)

Charging Rate 500 Bbls. per day		
Ratio, Chlorex to Stock	1.5:1	2:1
Temp. Extract Solution from Settler A	78° F.	104° F.
Temp. Raffinate Solution from Tower	158° F.	148° F.
Temp. Extract Solution from Bottom of Tower	122° F.	142° F.

Vol. % Raff. Yld. Sample No.	Inspections	94.4 °API Grav.	Vis./ 210° F.	C.C. Res.	% Increase Perc. Yld. Over Charge*	84.8 °API Grav.	Vis./ 210° F.	C.C. Res.	% Increase Perc. Yld. Over Charge*
1	Charging Stock	27.2	148	1.97	..	27.2	148	1.97	..
2	Final Raffinate	27.9	140.8	1.32	40	28.7	...	1.04	93
3	Final Extract	12.0	....	...	..	19.4	...	...	..

*Increased amount of solution run through the filters to 4 N P A color for raffinate as compared to charge.

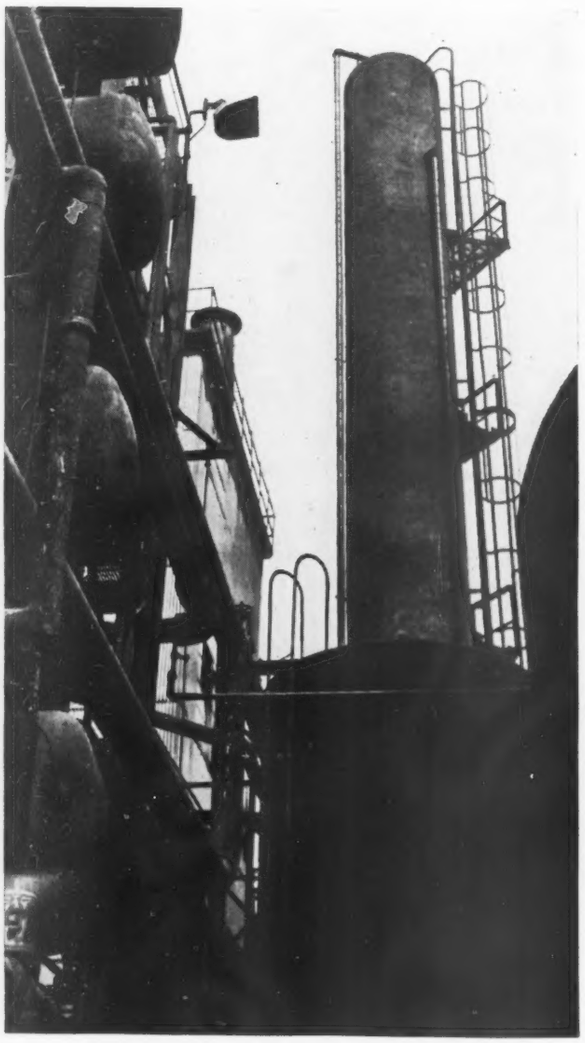


Fig. 3. Freedom's solvent contact tower in the background; the ends of the four settlers formerly used are seen in the left foreground. The tower is the equivalent of eight to ten such settlers. Chlorex storage tank in lower center

1. Pennsylvania neutral, bright stock and steam refined cylinder stock can be treated with Chlorex in a counter-current extraction tower of simple design without operating difficulties.

2. Results secured in these systems, shown in Fig. 1, are equivalent as regards yield and physical properties of the raffinates to eight stage batch counter-current extractions.

3. Based on results secured with this tower and considerable laboratory experience with stocks from other crudes, we conclude that Mid-Continent distillate oils or partially refined Mid-Continent residual oils can be effectively treated with Chlorex in a counter-current tower.

4. The tower has many advantages over a system of settlers and mixers. Included in these advantages are, less ground space, simplified operation by elimination of a multiplicity of pumps, float controls, etc., and lower solvent hold-up in the system particularly when operating the tower with oil as the continuous phase and Chlorex as the dispersed phase.

5. Wax bearing stocks can be treated in the tower under the proper conditions without operating difficulties and without sacrificing efficiency.

Acknowledgment

Much credit is due Dr. Frederick F. Diwoky under whose supervision the plant tower runs herein reported were made. Dr. Diwoky also secured all samples and worked up the data presented in Tables 1 to 4 inclusive.

Air Corps Calls For 8,000,000 Gallons Of 100 Octane Number Fuel

DAYTON, O., June 28. — Bids for eight million gallons of 100 octane number aviation fuel were opened here recently, the quantity being the estimate of requirements of the Army Air Corps for the ensuing six months' period. Awarding of contracts is expected to be about Aug. 1 or soon thereafter.

This is the largest quantity of 100 octane number fuel which has been called for by the Army to date, since the use of this grade of fuel was begun some three years ago. Authority has been granted the Army officials to purchase airplanes whose engines are specifically designed for this fuel, and will not operate satisfactorily on fuels of lower octane number, it is reported.

Contrary to a recent newspaper story, no monopoly on the manufacture and supply of 100 octane number fuel is held by any organization in this country or abroad. Several companies operate one or more units for the production of this grade of fuel, among them being Standard Oil Co. of New Jersey, Shell Petroleum and Shell Oil companies, The Texas Co., Gulf, Phillips, and others each of which can supply part if not all the present requirements. At least three processes are available for the manufacture of 100 octane number aviation fuels composed of pure hydrocarbons, as well as other methods for producing ethers, aromatics, and similar fuels of high octane number.

Nor is it true that the military services are exercising a monopoly on the available supply of 100 octane number fuels, officials point out. Several air transportation companies have been using this product in take-offs, and in experimental operation of transport planes equipped with engines requiring this fuel, for the purpose of collecting data on operating costs, engineering troubles involved, efficiencies, etc. Only in an emergency might a monopoly of this product be necessary. No other country now makes it.

The price of this fuel during the last six-month period has ranged from 12 cents per gallon at points near the supply points, to 22 cents per gallon at locations such as the Canal Zone, where long hauls increased the costs proportionately. This fuel has been supplied mainly by or through Standard Oil Co. of Kentucky, Phillips Petroleum Co., Shell Union.

Inhibitors

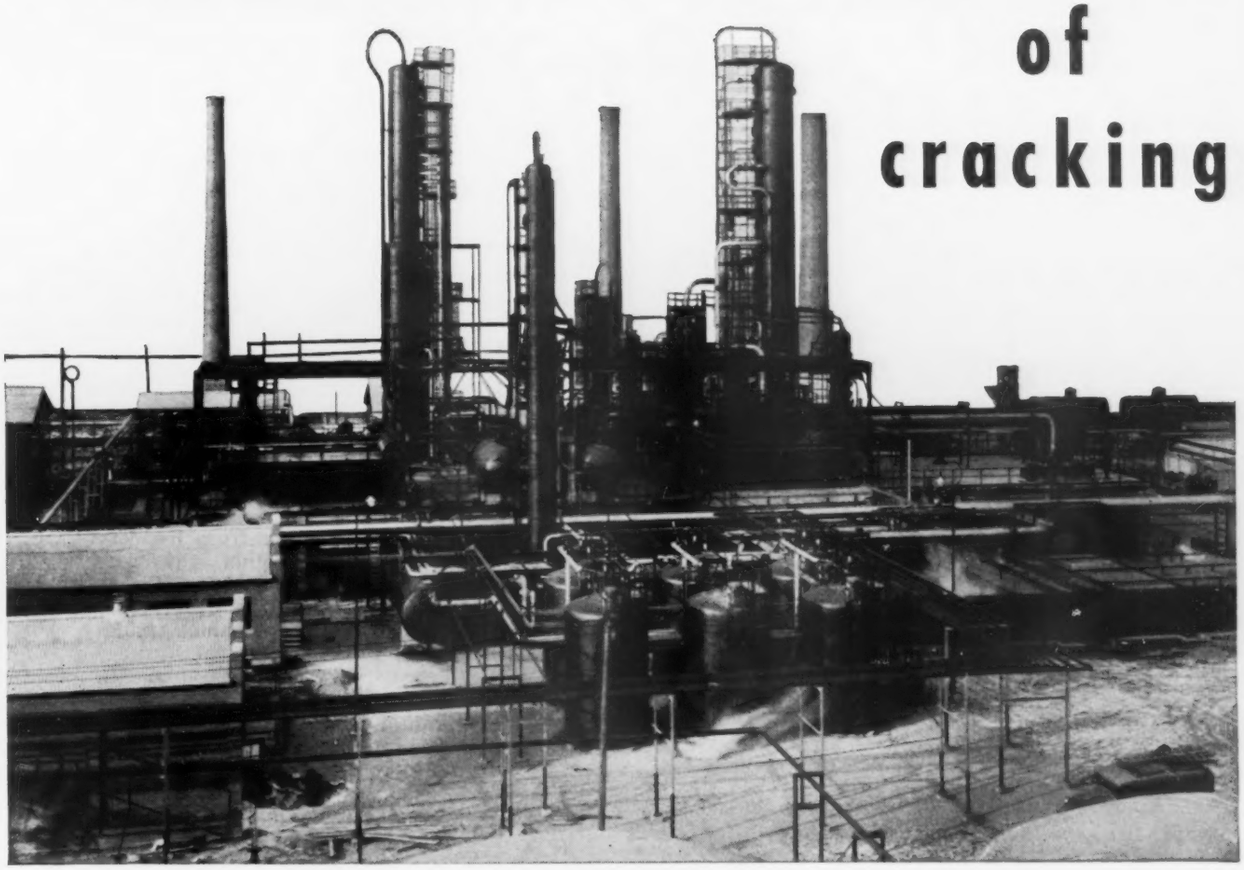
"The Use of U.O.P. Inhibitors" is the title of Universal Oil Products Co. booklet No. 224, just published. The new booklet covers the function of inhibitors, tests for determining the storage stability of gasoline, methods of using inhibitors, and precautions in handling in Part 1. In Part 2 gum formation in gasoline and the mechanism of inhibitor action are discussed. Storage and accelerated tests with inhibitors in typical gasolines are described.

Fred A. Miller closed 35 years of service with S. R. Dresser Mfg. Co., manufacturers of pipe couplings and fittings, Bradford, Pa., recently when he resigned as chairman of the board of directors, a post which he has held since 1929. Mr. Miller served 18 years as president of the company prior to becoming chairman, succeeding S. R. Dresser at the latter's death in 1911.

His resignation as a director and officer was accepted after a tribute by all his associates and election as honorary chairman. During his association with the gas and oil industry he served as president of the Natural Gas Supply Men's Assn. until its affiliation with the American Gas Assn. He later became a director of the A.G.A.

Recent Bureau of Standards studies of pressure losses in 90-degree 4-inch diameter pipe bends bent to radii from 6 to 80 inches shows results in reasonably good agreement with previous work, particularly if allowance is made for the roughness of the pipe walls, for bends having radii up to four times the pipe diameter. For greater radii of bends the flows appear to be unstable over quite a range which may account for wide discrepancies among investigators.

LOOKING into the economics of cracking



Typical Lummus Combination Selective Cracking Unit, built for a prominent oil company

The investment cost of a 10,000 barrel per day Lummus Combination Selective Cracking Unit, built for a major oil company, was $110 per barrel ($1,100,000).» » » The direct operating cost of this 10,000 barrel unit is around 9c per barrel.» » » With crude at $1.40 per barrel, delivered to the refinery . . . with the gasoline market at 5½c per gallon . . . with the fuel market at 90c per barrel—this 10,000 barrel unit is delivering a return of 120% per year on the investment.* » » » For refinery executives interested in yields and costs we have operating figures to show what can be done with recently designed equipment and combination processes.

* From a paper, "Combination Cracking Economics," delivered by E. R. Smoley before the Technical Session of the Twenty-sixth Annual Meeting of the Western Petroleum Refiners Association, Hot Springs, April, 1938.

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LUMMUS

PETROLEUM REFINING PLANTS

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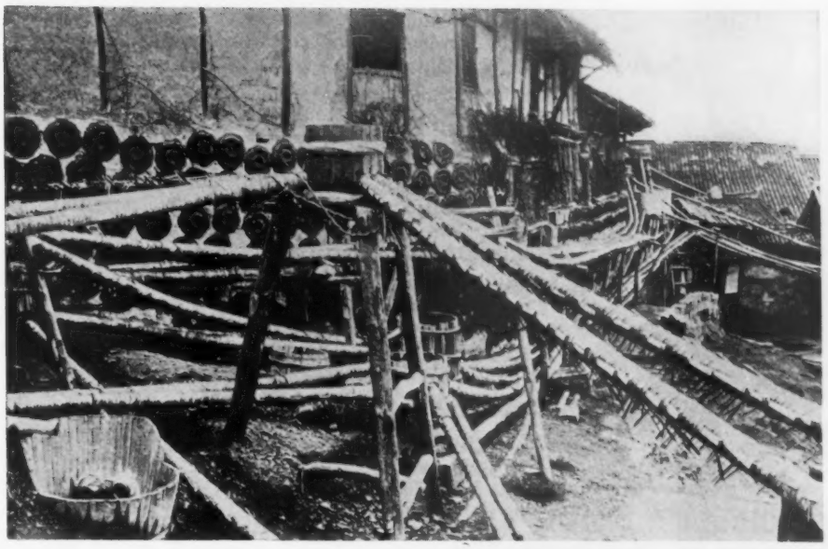
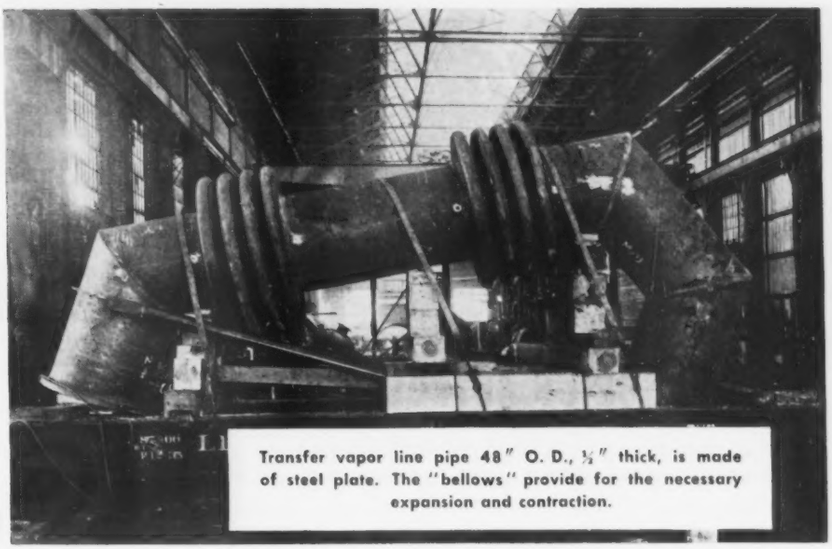


PIPING OF GRASS

PIPING of STEEL



Transfer vapor line pipe 48" O. D., ½" thick, is made of steel plate. The "bellows" provide for the necessary expansion and contraction.

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Chemical Treating of Surfaces
New Principle in Lubrication

By Arch L. Foster
N. P. N. Staff Writer

AN entirely new method of attack has been developed on the Pacific Coast, by an oil company, on the new problems in connection with the lubrication of friction surfaces which have arisen through the developments in automotive engines of recent years. It came to general public notice for the first time at the recent meeting of the Society of Automotive Engineers in White Sulphur Springs, W. Va.

As automotive engines, diesel engines and other prime movers have been improved, and the weight-to-power ratio has decreased, continually increasing loads have been placed on bearing and journal, on pistons, rings and cylinder walls.

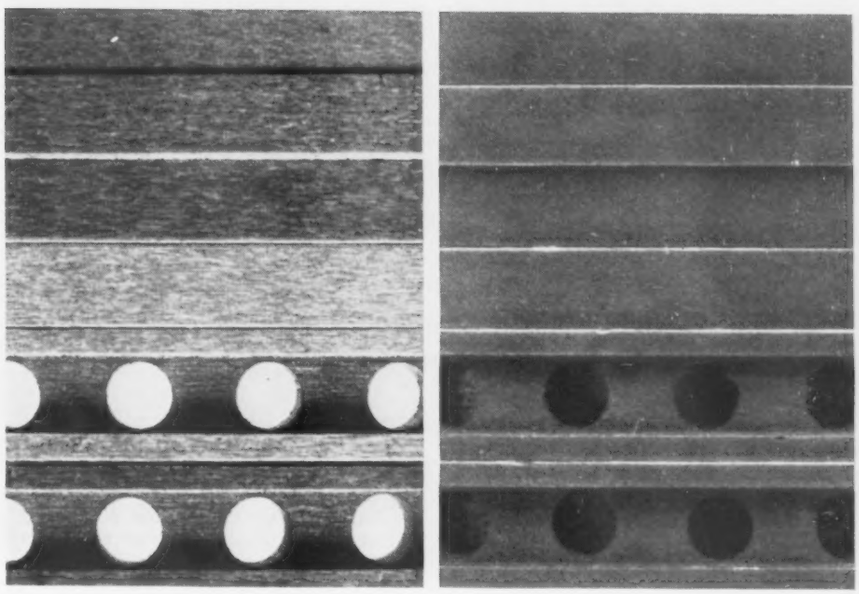
With the rapid development of the automotive engine in the last third of a century, with its high cylinder temperatures, high frictional speeds and ever higher unit pressures on bearing and journal, the problem of maintaining fluid film lubrication under these conditions has become acute.

In the intensive as well as extensive research on this problem, the lubrication technologist has utilized several methods for increasing the load-carrying capacity of lubricating oil. Refining processes have been perfected to manufacture lubricants of higher stability and greater film strength.

The most recent and widely adopted practice is to add to suitably refined mineral oils chemicals of different types, which impart to the oil the property of maintaining a film on the bearing at higher pressures than can be supported by mineral oil alone. These fortified oils are used widely in automotive equipment and to an even greater extent in diesel engines, where, especially for a portion of the stroke, the bearing pressures exceed any obtained in the gasoline engine.

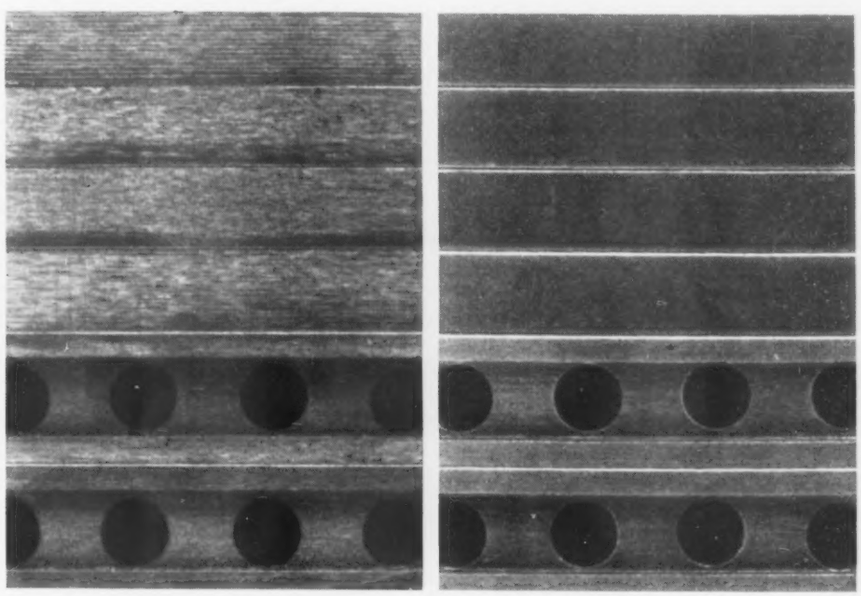
Practically all the research and investigative work has centered, however, on the lubricant itself. Little attention has been given to the lubricated surfaces. Harder metals have been used for bearings. Journals, cylinder walls, pistons and rings have been polished, and considerable work has been done on the shape and other design features of rings especially.

Yet the problem of lubrication has



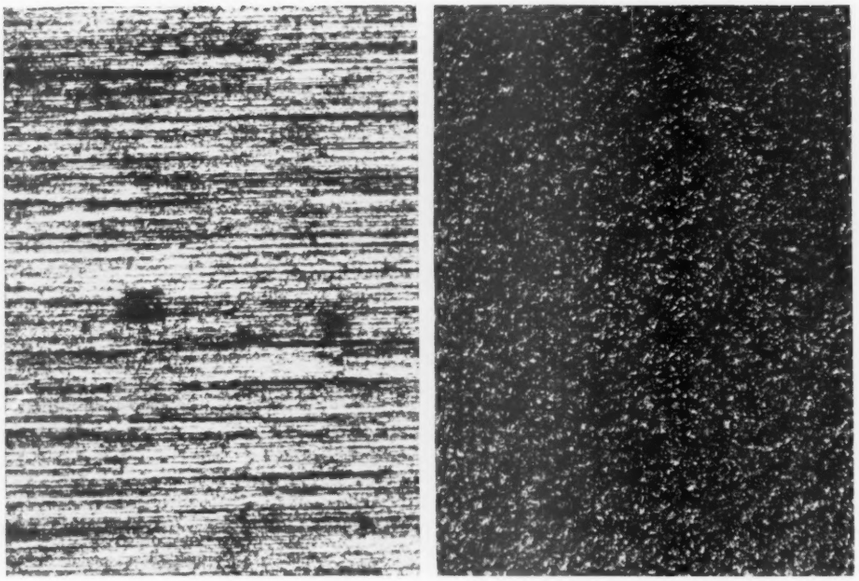
Untreated Ring—Before Use **Feritex Ring—Before Use**

Fig. 1—Low-power magnification of Feritex-treated and untreated piston ring surfaces, before use in the engine. Note the nature and direction of marks and striations on the untreated ring, and the absence of them, the uniform "matte" type of finish of the treated ring. Compare this illustration with Fig. 2



Untreated Ring After 6-Hour Break-In **Feritex Ring After 6-Hour Break-In**

Fig. 3—The same rings shown in Fig. 1, after a 6-hour break-in. The treated surface shows the appearance of transverse striations, in the direction of piston travel, while the treated ring is practically free from them



Untreated Ring—Before Use **Feritex Ring—Before Use**

Fig. 2—Treated and untreated ring surfaces, magnified 100 times, before use, showing clearly the difference in the condition of the metal surface. Machine marks have practically disappeared from the treated surface, while they are very evident in the untreated surface

always been laid on the desk of the chemist and the chemical engineer. Troubles which have arisen have been blamed on the lubricant, while the mechanical part of the common problem, the surfaces and metals to be lubricated, has been basking in the sun of blamelessness. Few if any technologists have paid any serious attention to the role the metal surfaces play in lubrication. Bad lubrication has meant bad lubricating oils, and the petroleum technologists have had to shoulder the load as best they could.

WITHIN the last two or three years developments have been carried out which, if present indications are correct, bid fair to re-allocate the blame for lubrication difficulties and, which is far more important, to introduce a new principle in lubrication engineering. It is probably too early to draw all-inclusive conclusions, yet extensive work and practical experience shows that a radically new idea has been brought into the field, which may well place the entire science of lubrication on a much advanced level. And the solution lays at the door of the metallurgist.

The FERITEX process, as the new development is called, was worked out in the laboratories of Standard Oil Co. of California, by chemists and metallurgists of that staff. As is the case with a large percentage of the discoveries which become important to industry, the reaction of most informed observers, when first introduced to the principle, is "Why wasn't it thought of before?"

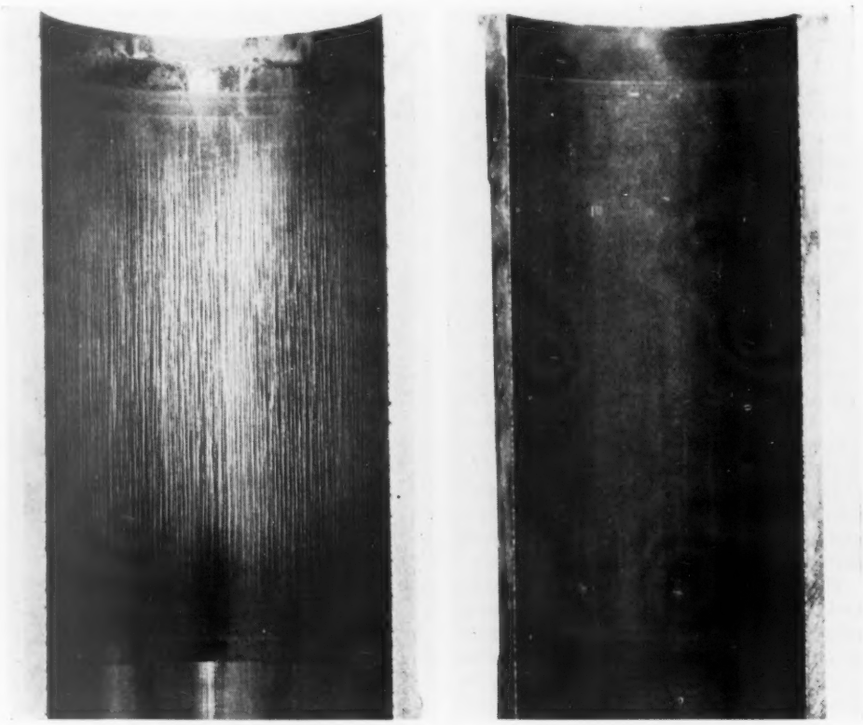
In brief, this important new process is merely that of treating the steel of the surface of cylinder walls, rings, pins, crank bearings, or any surface exposed to pressures and requiring lubrication efficiency, in a solution of chemicals for a predetermined time under predetermined temperatures, then cleaning the treated surface, and oiling.

The principle involved is that of removing selectively certain constituents of the steel, such as ferrite, to a depth which is found to be desirable, forming not a highly polished surface without irregularity, but one which is covered with a network of microscopic pits, grooves and slits, still preserving the even level of the main portion of the finished and polished surface.

According to G. L. Neely, lubrication technologist of the California company, the solution — the composition of which has not been disclosed — does not affect the heat treatment or the properties of the metal obtained by heat treatment, but attacks the surface, without affecting tolerances or manufacturing limits set by the requirements of the product.

THE ferritic and some other particles in the metal matrix appear to be more susceptible to the chemical's action. These ferrite grains are also the portion of the steel surface most likely to be torn from their places and carried along between bearing and journal or other rubbing surfaces, causing scratches in the surface. Fig. 5 illustrates this effect, found in actual cylinder liner surfaces after breaking in without the new treatment. The small particles have been dislodged, probably by a welding action with the opposing surface. The dislodged particle rides between the two surfaces, producing scratches, which are the beginning of scuffing and excessive wear.

These particles may or may not be ferrite grains, we are told. When the



Untreated After 6-Hour Break-In (Severely Scratched) **Feritex After 6-Hour Break-In**

Fig. 4—Cast iron cylinder liners of a diesel engine, treated and untreated, after a 6-hour break-in period. The difference here is too obvious to require comment

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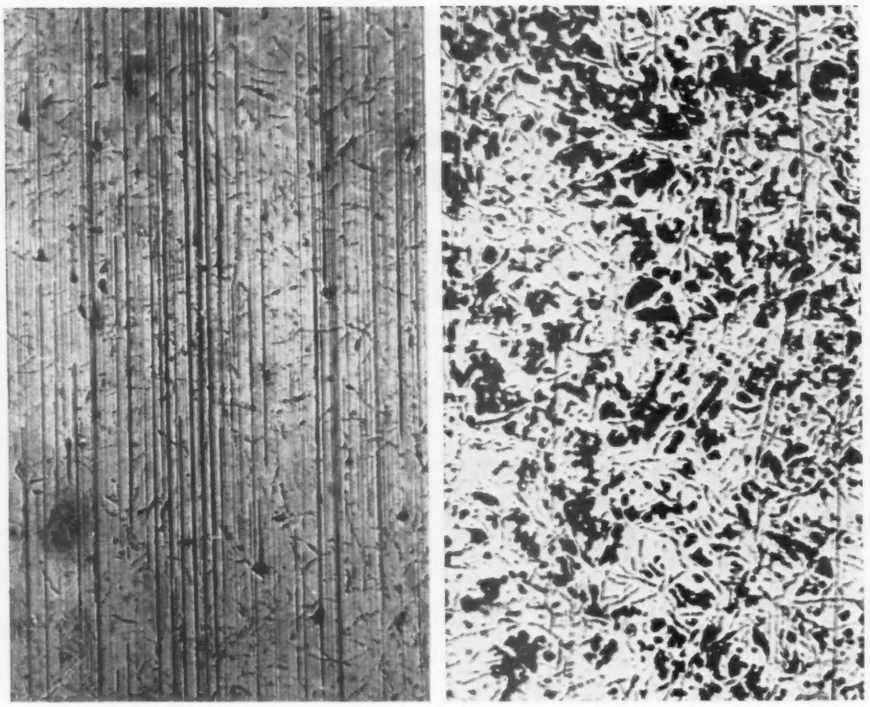

Untreated After 6-Hour Break-In **Feritex After 6-Hour Break-In**

Fig. 5—The same type of surfaces as shown in Fig. 4, magnified 50 times. Note how small particles have been pulled from the untreated surface (incipient welding?) and have been dragged along, producing heavy scratches, which are the beginning of scuffing

machine part is treated in the chemical bath, the ferrite or other type of grains are attacked and dissolved, leaving the less eactive grains and the carbon particles unattacked. This forms an uneven surface, the tops of the harder, unattacked particles, however, forming an even surface or series of surfaces of the same height as when the piece was machined to specifications.

THE lubricant is retained in the "hollows" from which the steel grains have been removed by chemical action, and supports the working parts to a degree unknown in any other method except when using extreme pressure lubricants. A depth of eight-one hundred thousandths of an inch is typical of these hollows which form an irregular network over the bearing surface.

According to the inventors of this system of treatment, the advantages from the use of this method may be summarized:

It removes certain micro-constituents from the steel, such as ferrite, and also loosens and removes loosely held particles which became imbedded mechanically in the surface during the machining operation.

It facilitates removal of high spots in the surface, speeding up the break-in period.

A porous or blotter surface is formed, which improves the spreading tendency of the lubricant. Oil dropped on the surface spreads as it does in and through a blotter, we are told.

The surface so produced has strong extreme pressure properties, carrying high loads without failure, as when using extreme pressure lubricants. Tested on extreme pressure machines, test rings treated by the Feritex method showed with straight mineral oils a load-carrying capacity or film strength six times that of untreated pieces, and a reduction in wear of 20 to 1, it is said. Such treated surfaces carry the top load of the SAE testing machine.

Break-in time on several hundred diesel engines, over a period of a year, showed only one-tenth the amount of scuffing experienced in the same engines with the old break-in method, it is stated. A break-in period of 100 hours is reduced to three hours with the new system, while subsequent wear rate in these engines is considerably lowered.

It was this method of treatment which was referred to by C. G. A. Rosen, Caterpillar Tractor Co., at the last meeting of the American Society of Mechanical Engineers, who stated that this development is of the "first magnitude", and that a quick break-in to full surfacing is conducive to low cylinder and ring wear. The value of quick and effective sealing of rings and cylinder contacts to eliminate blow-by to the crankcase can not be overestimated, Rosen pointed out.

Numerous other advantages have been found for this treatment of steel surfaces. Machine marks unavoidably left on the surface during finishing are almost completely removed by this method of treating, it is claimed. Inequalities in surfaces, such as of cylinders, are eliminated nearly entirely, preventing the unequal wearing of parts of the surface during use of the cylinder and thus giving effectual blow-by prevention.

It is somewhat early yet to prophesy too specifically as to the final value of this new development. However, engineers who have studied it in the automotive and petroleum industries are convinced that the new method of surfacing may well offer the solution of many of our high pressure lubrication problems of today and even those of tomorrow. The metallurgist and the automotive engineer have shouldered a proper proportion of the burden of solving lubrication difficulties, as engine efficiencies are boosted and as conditions imposed on lubricants begin to approach the limit of possibilities of oils and to exceed what can be met by the natural chemical properties of these products.

THE new process is offered under non-exclusive license to all responsible companies interested, by the Standard Oil Co. of California, it is stated. The method is protected by a complete patent coverage. A detailed article or paper discussing the process and its results exhaustively will doubtless be presented within the year, officials state.

One large automotive engine manufacturer is now using this system on all rubbing parts of the engines, to speed break-in and improve later wear efficiency. Several manufacturers are studying the idea with its adoption probably in the near future. One car maker will probably use the process in treating engine blocks and rings for surfacing the cylinder and ring surfaces prior to assembly of the engines, it is said.

Stripper Well Meeting

TULSA, June 25. — National Stripper Well Association, composed of local and state organizations in nine states, will hold its annual meeting in Tulsa, Oct. 18, President W. W. Warner, of Nowata, Okla., has announced. The Oklahoma Stripper Well Association, of which Mr. Warner is president, will meet the same day.

Other executive officers of the national association are Harold B. Fell, executive vice-president and Howard J. Whitehill, secretary-treasurer. Both live in Tulsa.

The two meetings will immediately precede the ninth annual meeting of the Independent Petroleum Association of America in Tulsa, Oct. 19, 20 and 21.

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Many oil companies believe that the second lift at a station is cheap business insurance. With one lift occupied the empty one is a welcome mat to the motorist who is shopping for a grease job or oil change

Profit Possibilities In a SECOND Lift

By John W. Thompson
N. P. N. Staff Writer

WHEN your liver kicks up and parades before your eyes a series of pigmies and big pink elephants, you call up Dr. Slice and he tells you to "come in to see me at 2:30 this afternoon", or "come over in an hour".

When your wife wants a permanent and a strawberry rinse, she calls Madam Gilfishheimer's Beauty Salonne, and the Madam says, "I can take you at 4 o'clock today."

When little Sarah finishes her music lesson this afternoon, Profesor Thump will tell her to come back at the same time next week.

But when Joe Average decides at 3 o'clock Saturday afternoon that he can spare an hour to get his car greased and the oil changed, he immediately heads for his favorite station and opens with: "Can you take me on right away for a grease job and oil change, Ed? I'll wait for it while you do it."

Of course, Ed already has three other Joe Averages on his neck who are "waiting for it", so Ed just has to say: "Sorry, but I'm tied up for about two hours." Whereupon, Joe Average starts down the road on a shopping tour for an open lift.

If Ed were able to run his business like the doctor, the Madam, and Professor Thump, everything would be fine. He could educate his customers to call in for an appointment for their grease jobs and oil changes, and he would have an even flow of business throughout the week.

Unfortunately Joe Average the motorist will have none of that. He insists on having his car put in shape only at peak periods, which, of course, is what makes peak periods.

Oil companies say that lubrication customers are divided into three groups; those that come in regularly once a month, regardless of mileage; those that have their cars lubricated four times a year; those who make the peak loads at stations, the week end boys and the boys who are in the I'll-wait-while-you-do-it class.

If lubrication jobs could be done on appointment, the flow of cars throughout the week could be evened out and one lift could handle all of the work coming into the average service station.

LOOKING at conditions as they actually are in the service station, adequate lift capacity should be based on peak loads and maximum customer traffic at the station.

To the operator who is studying the need for a second lift at his station, the question to be solved is not: "How much increased business can I get with a second lift", but rather "How much am I losing by having only one lift".

One station operator told this writer that he does 200 lubrication jobs a month at his station with two lifts, and that he could easily handle that

How a MARATHON RUNNER can Help You Pick Your PUMPS!

WHEN you see a marathon runner pounding along endless miles to win his race, you don't need a doctor to tell you that the winner's rugged body encases a pair of powerful lungs, a stout heart, and sensitive but steady heart valves.

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business with one lift if he didn't have the peaks to figure. But it is the rush periods that make a second lift necessary.

One oil company points out that experience has shown that 150 lubrication jobs per month is about the maximum that one lift can handle conveniently, and that for any over that amount a second lift is needed. In other words, according to this company's experience in its own stations, when a station hits 150 lube jobs a month with one lift, the operator is warranted in putting in a second lift.

Many operators look upon the second lift as cheap business insurance. Many motorists, most of whom are of the ants-in-the-pants variety when it comes to station service, will pass up a station if they see the lift is busy and hunt another place to get an oil change or a grease job.

THE extra lift, if not in use, will bring this sort of customer in, and even though the station cannot serve him immediately, he feels that he is "next" if he can roll his car on the lift. Theoretically, of course, with both lifts in use, the station is still in a bad position when it comes to enticing more customers into the station, but with the second lift in use, at least it has one more customer than with only one lift at the station.

As another argument in favor of the two-lift station, it has been pointed out by lift manufacturers and oil companies alike that a one-lift station often throttles the flow of business through the lubritorium. A station with only one lift, for example, may be doing a straight chassis lubrication job, while, if the lift were open, or if there were another lift available, there is always the possibility of attracting that customer who wants the "works"—chassis lubrication, transmission and differential change, oil change, front wheel bearing lubrication, motor flush and so on.

In recent years station operators have found more and more profitable jobs that can be done on the lift, which fact is entered as another argument in favor of an additional lift at the station; for to tie up one lift with a job that possibly may bring in only one profit, when two lifts would increase the chances of bringing in multi-profit business, is not following the rules in the book on "How To Succeed".

Today the lift is finding a quite general use at service stations in such capacities as brake service, chassis lubrication, wheel bearing lubrication, shock absorber service, transmission and differential flushing and lubrication, oil crankcase flushing and changing, washing, tire changing, and other service items.

THE operator who contemplates adding a second lift should not necessarily conclude that two lifts will develop twice as much lubritorium business as one lift. However, he can and should expect a 25 per cent increase in his lubritorium business, assuming he will exert a normal amount of effort in acquainting customers with his facilities, oil companies say.

As for the additional lift paying for itself, lift manufacturers say that three additional lubrication jobs a day, including chassis, transmission and differential change, and oil change, will pay for a lift in one year.

At some of the larger stations, efforts to even out the peaks of lubrication business over the week and bring a more even flow of business have been accomplished to a certain extent by a motorcycle pick-up service. With this plan, the customer's car is called for and delivered, and to an extent these jobs can be fitted into the lean portions of the lubritorium work day. The additional cost of this type of service, however, cannot always be offset by the increased business which the service brings in.

Give Your Accessories a Lift

With the sale of new cars greatly reduced this year, and with two used cars being sold to every new car purchased, the streets and highways this summer are full of replacement dollars — compulsory replacement dollars — that MUST be spent on cars of two, five, and even ten-year vintages.

Bald tires, crippled batteries, burned out spark plugs, dead lamp bulbs, frayed fan belts, worn-out windshield wiper blades, rotted radiator hose — these are only a few of the items that need replacing this very minute on hundreds of thousands of cars. A replacement market? Yes, and also a COMPULSORY MARKET, born of necessity.

How do oil companies get this business? If they have modern lubritoriums in their stations it comes to them on a "silver platter"; but their operators have to be alert enough to ask for it when they see it.

In the lubritorium, where the customer's car is in the operator's complete possession for a half hour to an hour, there is every opportunity to check that car for replacement needs. Tires, battery, spark plugs, lights, fan belt, windshield wiper blade, radiator hose — items needing replacement do everything but reach out and bust you on the nose.

The important connecting link is to develop a way to attract customers to your lubritoriums. Modern lubrication equipment will go far here. Efficient greasing equipment, a clean lubritorium, and a lift are important factors in a bid for replacement business.

So, if you would get some of the replacement dollars rolling through the streets in front of your stations, give your accessories a lift. And remember, if a lift is busy customers won't wait. So, if necessary, give your accessories two lifts — and get the replacement business that's coming to your stations.

Does A Second Lift Pay?

An oil company's highway station in Little Rock, Ark., after trying for some time to get along with one lift, finally realized that one was inadequate and ordered a second. The second lift, a bus and truck type, was installed ten months ago to get the business of some of the hundreds of trucks that pass the station daily.

Since its installation, the station has shown the following increases for the ten-month period:

5667 gallons of gasoline
643 gallons of oil
745 pounds of gear lubricants
480 pounds of chassis lubricants (this represents about 600 grease jobs extra for the period)

These increases are comparisons between the past ten months and a similar period during the previous year.

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26 JOURNAL SQUARE

JERSEY CITY, NEW JERSEY

Jobber Modernizes Rest Rooms, Lubritorium To Build Sales

The new lubritorium in process of modernization. The room in the far corner houses the men's and women's rest rooms. The interior of the lubritorium is to be finished in knotted cedar similar to the rest rooms

CLEAN rest rooms have come to Roscommon.

Roscommon, in case you have not heard of it, is well up in the center of Michigan, on the route to upper Michigan vacation spots. The town itself boasts a population of about 500.

In the center of this village, on state highway 27, is the combined service station and office of the Roscommon Gas & Oil Co., operated by two brothers, Fritz and Ernie Bertle.

. These boys, in addition to operating their own station, serve nine dealers within a radius of 25 miles of the town. Two trucks, of 410 and 750-gallon capacities, operate out of their 40,000-gallon bulk plant.

Fritz and Ernie have succeeded in glorifying the service station rest room in a manner that would do honor to the modern city super service station. The two rest rooms are built into a rectangular space 7½ by 16 feet in the rear of the station and extend into a new two-bay service room addition which is now being completed. Both rest rooms are finished in knotted cedar walls and ceiling, being first shellacked and then varnished.

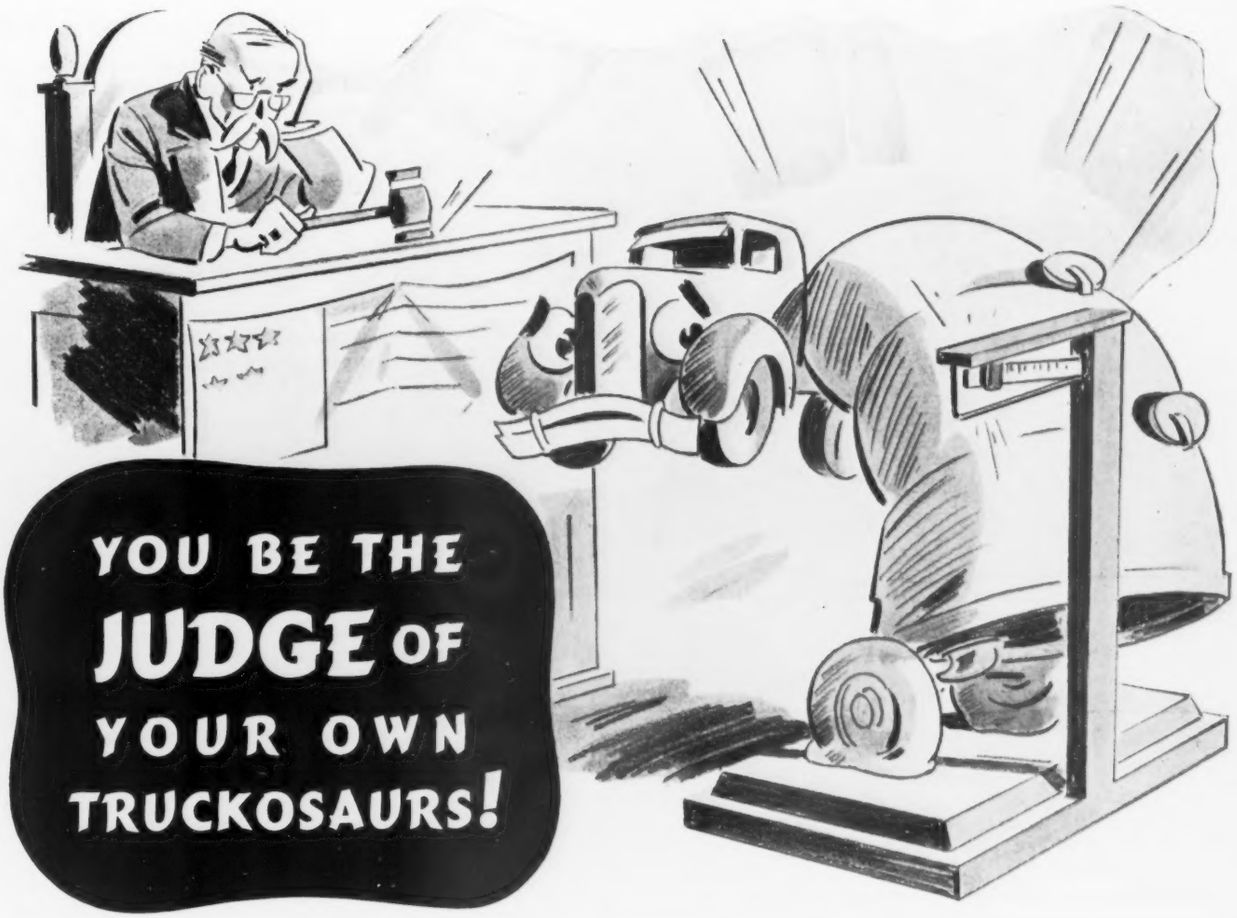
Both rest rooms are fully equipped with mirror, paper towels, toilet, soap dispenser, wash stand, drinking water, and paper drinking cups. An order has been already placed which will provide paper seat covers for the toilet seats. Although the paper seat cover dispenser will cost the Bertles $1 apiece and the seat covers $3.75 per thousand, they will be available to all who use the rest rooms, free of charge.

The men's room, covering 6 by 7½ feet, is provided with adequate ventilation by two ceiling-height windows. The floor is of concrete and is designed so it will drain easily and quickly.

The company-operated station and office of the Roscommon Gas & Oil Co., at Roscommon, Mich. The new two-bay covered lubritorium and wash rack addition can be seen in the rear. The walls of the older building at the front are constructed of native cobble stone

THE ladies' rest room, measuring 7½ by 10 feet, is entered from the outside, a concrete walk leading from the front of the station to the rest room door. An outside window is decorated with clean curtains. Inside the ladies' room, the toilet is separated by a partition with a swinging door. In addition to the similar equipment supplied in the men's rest room, the ladies' room contains a small dressing table and a wicker rocking chair. Cleanliness is a watchword.

The Bertles have evidenced confidence in the clean rest room as a means of building station business. Local motorists have become acquaint-



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The entrance to the new ladies rest room at the Roscommon station. The interior walls and ceiling are constructed of knotted cedar, shellacked and varnished. In addition to the usual plumbing fixtures, this room includes a dressing table, wicker rocking chair, and a private compartment for the toilet. Paper seat covers are soon to be furnished. Note the curtain in the window

ed with the rest rooms, tourists have stopped to use them and to express their appreciation. According to the Bertles, the new rest rooms, even though they are just a few weeks old, are beginning to aid business.

Fritz Bertle says he is thinking of putting a sign over the men's rest room door, to read, "The Best People Pass Through This Door—Our Customers". Thumbtacked on the office wall is a clipping which lists National Petroleum News Minimum Profit Standards for Station Cleanliness.

THIS company's operation offers a good example of how the jobber who owns and operates a station can use that station as a model for his dealers. This station can be made an experimental depot in which sales and merchandising may be tried and, after having proven their worth, passed on to the company's dealers. This is just what the Bertles plan to do with their new rest rooms. It is their plan to bring the dealers in to their station in Roscommon, show them the rooms, how they were built, the cost, and then show them how clean and modern rest rooms can increase business at the station.

The company is now completing the covered service wing on the rear of the station. This is a frame structure, and the interior is to be covered with knotted cedar similar to the interiors of the rest rooms. The lift, formerly located outside the station, has been moved into the new lubritorium. Half the service room will be devoted to car washing.

The station building itself is constructed of native cobble stone, gathered from nearby farms and fields.

The Bertles feel that competition is going to make summer tourist business a little more difficult to get this year, so they are turning to modern rest rooms and a modernized lubritorium to attract the trade—and already the investment is starting to prove its worthiness.

A baseball score board and radio loud speaker are located outside the station facing the service drive. Scores of the Detroit game are recorded every playing day. "This just sort of keeps the local people reminded of where our station is," explained Fritz Bertle. The Bertle's own station did a 116,000-gallon business in 1937.

Famous Picnics, These Of Cincinnati Club

(Since NPN could not be represented at the Cincinnati Oil Club's picnic, Edeson H. Baker, Cleveland district supervisor of sales for Quaker State Oil Refining Co., volunteered to write the following account of this well known oil outing.—Editor).

By EDESON H. BAKER

Right on schedule and running far into the night, the Cincinnati Oil Club picnic June 16 at the Miami Boat Club, a short drive from Cincinnati, lived up to its traditional reputation for both quantity and quality of attendance.

As is always customary, no business was transacted at this gathering. In fact, it is known far and wide for its fun and feasting, and has even advanced in the past few years from the classification of a "dinner under the trees" picnic to become a "burgoo" picnic, with the list of "foods and beverages" headed by that most famous of dishes of the nearby "blue grass region" which answers to the name of "good old Kentucky burgoo."

While unknown to most oil jobbers of other sections, the combination of its shredded beef, pork and chicken, all combined with many different fresh vegetables in a big kettle of rich soup stock has become one of the additional drawing cards which attracts all the oil jobbers for hundreds of miles around Cincinnati.

Among those in attendance, representing the Ohio Petroleum Marketers Association, were Eric V. Weber, president, Cincinnati; Hubert B. Fuller, general counsel, Cleveland; Robert A. Warfel, executive secretary-treasurer, Columbus. As in previous years, Mayor "Jim" Stewart of Cincinnati was a guest of the oil club, whose president is Ed Hegar. The picnic was the result of the work of several committees headed by their general chairman, Wilson Storey, of Cincinnati.

L. G. McLaren

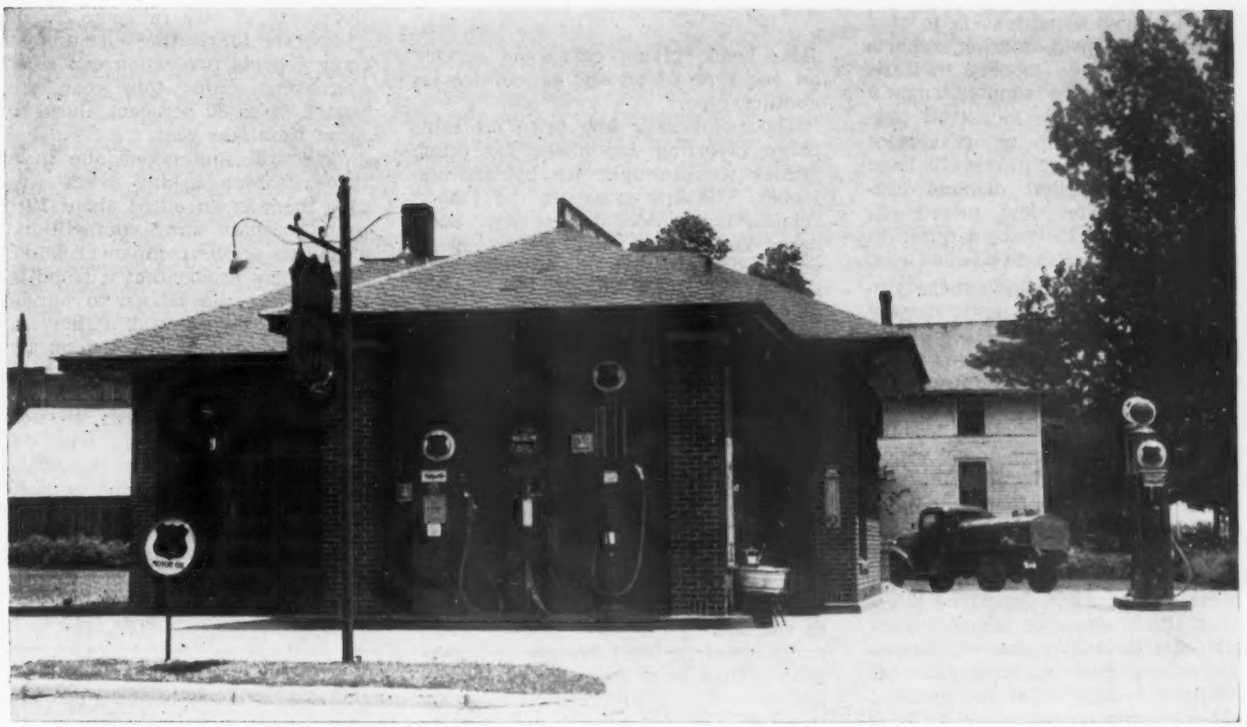
In Charge of Marketing For The Shell Oil Co.

SAN FRANCISCO — L. G. McLaren, general sales manager, Shell Oil Co., has been elected vice president in charge of the company's sales, storage, and distribution in the 10 western states, in Hawaii and British Columbia.

McLaren joined the company in 1921 as a service station employe at Seattle. He has served as salesman, local manager, district manager and division manager in various cities of the northwest and in the Hawaiian Islands. He was transferred to the San Francisco headquarters as general sales manager in 1935, from Seattle where he had been division manager for the northwest.

N.P.N. says this is an advertisement, but we say it's national petroleum news

Gallonage Climbs Like the National Debt



A small city station with big city gallonage. This modern service station operated by H. V. Maas at New Hampton, Iowa, averages around 10,000 gallons per month.

14% increase in 1937 over 1936; 11% increase in 1936 over 1935. Sounds like the national debt but instead it is the gallonage record of H. V. Maas and his Blue Line Oil Company of New Hampton, Iowa.

Even more interesting is the fact that these increases are not new experiences, the Blue Line Oil Company has shown gallonage increases every year since it started handling Phillips 66 products *ten years* ago. Such a record is amazing in view of the troubled economic conditions and increasing competition during this period.

That Mr. Maas is an excellent operator is definitely indicated by these results, and it is especially pleasing, therefore, to have him acknowledge the part played in this success story by the quality and reputation of Phillips 66 products. Mr. Maas says, in part:

"Starting my seventeenth year in the petroleum business, my fourteenth as an independent jobber and my tenth year as a distributor of Phillips 66 products, I wish to express my appreciation and thanks to the Phillips Petroleum Company for the high quality products offered and the fine public acceptance that these products receive in our community.

"My gallonage has increased steadily each year since I started selling Phillips 66 even in the face of business depressions, recessions, and added competitive outlets."

SALES INCREASES THAT CONTINUE

Here then is another indication of the pulling power of Phillips 66. Time after time we have quoted letters from jobbers who have shown tremendous gallonage gains immediately upon switching to the Orange and Black shield. That such gains are not a temporary flash-in-the-pan proposition is proved by the sales histories of the Blue Line Oil Company, and of many other Phillips 66 jobbers. Gains continue to follow gains, year after year, and before long you may find yourself head of the largest gallonage concern in your community, owner of two large cattle farms and director in a bank. At least that is the situation Mr. Maas finds himself in today.

Do your sales add up that way? Do they continue to go ahead year after year? If not, you should be interested in the Phillips franchise. There may be an opening in your territory. Write, wire or phone

PHILLIPS PETROLEUM CO.
Bartlesville, Oklahoma

Chicago Minneapolis St. Louis
Indianapolis Des Moines Omaha
Peoria Kansas City Wichita
Tulsa Amarillo

How Jobbers Meet Low-Price "Lube" Oil Competition

THE oil jobber's reaction to selling low priced motor oil at service stations in the face of present depressed business conditions is to stay away from this price market, reports from representative jobbers indicate.

Jobbers who have adopted such a policy in cities where industrial payrolls are at low ebb report service station sales of higher priced oils have not suffered and that demand continues nominal for low priced oil, selling at around 15 cents a quart in bulk or for a dollar in two-gallon can.

In taking such a position these jobbers acknowledge that demand for low priced oil does exist with some motorists. However, they question whether they can successfully compete with accessory stores and mail order houses in this market, on account of the special conditions under which oil is sold at the service station.

On the opposite side, there are those who believe the jobber should go after all types of oil business. Their theory is that the jobber is in the oil business and as such should be interested in the business of all oil buyers at all price levels. As one compounding company puts it, wholesale oil prices have declined in recent months, and if operating costs are put in line, the jobber can offer the price trade as good an oil as price selling competitors and make the same margin of profit.

The case for marketers not inclined to enter the price market on motor oil is summed up by one long established jobber, selling oil under his own brand, with the statement; "We cannot cover all the waterfronts."

The jobber believes his company stations and dealers have built a certain reputation and are getting the type of motorists willing to pay the prices asked. As for the motorist looking for low priced oil, the jobber questions whether his stations, in view of his reputation, can compete for that business.

Another jobber turned to the point that the station is selling oil as a lubrication service rather than as merchandise. Other retail outlets, this jobber pointed out, sell oil in the buyer's or the seller's containers as merchandise. The customer takes the oil home and performs his own crankcase service.

The service station customer, however, expects crankcase service; hence the difficulty of the station putting low price oil on a strict merchandise sales basis, giving crankcase service on one type of oil and no service on another type.

By E. L. Barringer
N. P. N. Staff Writer

The point of a low price oil campaign diverting customers for other grades was brought up by another jobber. The low price oil, the jobber relates, is intended to get new business. Yet station employes eager to make a quota push the oil to everyone. In the end the station makes its quota all right, but has few new customers and finds some of its higher price oil customers are now buying low price oil.

A jobber marketing in a rural community that can claim to be among the sections hit hardest by drought and crop failures reports that, in spite of these conditions, demand for low price oil has declined to the point that his stations carry it only in cans.

At one time the jobber's 48 stations carried a 20-cent a quart oil in bulk, in addition to the jobber's own brand and several national brands at higher prices. Now only three stations stock the 20-cent oil. All stations carry a two-gallon can and the jobber reports sales are nominal, some cans being taken home by customers and in cases where a station gets a crankcase drain on low price oil what is left of the oil is taken home in the can, by the motorist.

The vacant lot oil sales agency, prominent in some cities a few years ago, selling oil from bulk at around 10 cents a quart, has not returned in this depression. The trade questions whether this sales place will return, in view of established outlets selling a good quality oil at a low price, with the unemployed now turning to relief assistance.

Reports generally seem to indicate that the two-gallon can has lost its popularity, as against five years ago, yet local reports show a rise some places, as against a decline in others.

One lubricating oil supply company, for example, reports sales are "way off" over five years ago. This company used to buy 10,000 cans in an order, and put up three grades of oil. Now cans are bought in 5000 lots and only two grades are packaged.

The trend, the company reports, is towards the five-quart can instead of the two-gallon container. The smaller quantity is reported by the trade to appeal to the buyer performing his own crankcase service, yet who does not want to buy in large quantities.

Another lubricating oil supply company reports two-gallon can sales are increasing. Sales this year are reported to be 30 per cent ahead of the same time last year.

"We still find about one in every three jobbers asking what we can give them in an oil at about 19 cents to meet chain store competition," an executive of the company related.

Suppliers report that a trend is setting in for the jobber to handle oil under his own brand, either buying finished oil in tank cars or having an oil put up under his own brand in one and five-quart cans.

The trend is reported as not applying to small jobbers who do not have bulk plant storage capacity now, or whose annual volume is not sufficient to warrant packaging in quart cans. In such cases the jobber takes on the lubricating oil supplier's private brand as his own brand in his community in most cases, if he desires a private brand.

SOME jobbers are reported to be turning to tank car buying to have a motor oil to sell under their own brand and to have a line to meet price competition. The trend is not reported to be so noticeable in service station sales, where the jobber either has had his own brands established for years, or handles refiners' brands and buys two-gallon cans from his refinery or lubricating oil company supplier. Bulk oils for the medium sized jobber are reported to be used mainly in competing for farm trade, or on specification commercial business.

The finished oils are bought in compartment tank cars and the jobber does his own packaging at the bulk plant in five-gallon cans or in drums. In some cases the jobber fills containers direct from the tank car, without running the oil through storage.

One jobber, for instance, began buying oil in tank cars last year to meet competition in the farm trade. For his dealers he continues to handle several advertised lines, including an oil from his gasoline supplier, and a two-gallon can from a lubricating oil supply company.

The jobber had several idle 2000-gallon storage tanks at the bulk plant.

Now several grades of oil are stored there and the plant man fills cans and drums from storage during idle time. Drums are cleaned and repainted by hand. The jobber does the selling himself by calls among the farm trade, so there is no cash outlay for establishing a brand name and the jobber is saved the cost of labeling.

For the jobber considering handling his own brands, suppliers point out that several factors must be taken into consideration, an important one being the jobber's total oil volume. If a jobber's business is large there might be some savings in buying several grades in the fast moving lines in tank cars, it is reported.

While tank car prices and freight rates are lower when buying in tank cars than in packages, there are several offsetting factors the jobber must consider. One of these is the handling cost at the bulk plant, if the jobber does not have storage already in place, in tanks, possibly heat during winter months, and in the filling, cleaning and painting of containers.

Another factor is the relation of quantity in tank cars against total oil sales. A jobber's entire business might be sufficient to enable him to buy in drums in car load lots. By purchasing some of the fast moving grades in tank cars the balance of the jobber's oil sales might be so low that this oil, bought in drums, would have to take the lcl rate. Thus, the additional freight on lcl shipments, against the car load rate in buying all oil in drums, would have to be set up against the savings of buying the fast moving grades in tank cars. All of which puts the question up to the jobber to figure on oil costs, various freight rates, handling and sales costs, and his market, when considering how to buy his lubricating oil supplies.

The one and five-quart can has come into wide use in recent years for service station oil sales and the number of brands has increased rapidly. Many first and second price line oils are now packaged, and one refiner is starting to package a third price line oil. One source estimates that today there are about double the number of individual brands in one and five-quart cans as of a year ago.

The problem of the jobber selling an oil in cans under his own brand is reported to be more in the cost of establishing such a brand among dealers and consumers, than in the cost of packaging.

For packaging in its simplest operating form the jobber can fill cans by draining or by a hand pump from a drum. A sealer handling eight to ten cans a minute rents at about $15 a year. By eliminating the five-quart size the jobber could buy some 5000 one-quart lithographed cans, about the smallest size order accepted. Cans bought in such small quantities cost more than in large lots, the difference easily amounting to one cent a can.

For more elaborate and faster filling and sealing equipment the cost would be higher. Automatic filling machines cost from around $165 to $3000 for the large size. Rental of the sealing equipment just about doubles as the capacity increases until for the fastest machines the annual rental is around $300.

Private brands are packaged also by lubricating oil supply companies, the general policy being to charge the jobber for the oil and the containers, plus a filling charge. A minimum quantity is placed on such orders. One company, for example, accepts private brand orders for 5000 one-quart and 2500 five-quart cans.

Several trends have developed recently in the farm oil trade. One of these, surprisingly enough, is for the farmer to buy one and five-quart cans in the service station.

Several jobbers report this type of business. The farmer stops at the station for service work on his car and leaves with a case or so of oil, induced to buy by the convenience of handling oil in the smaller containers. Such sales have not been large, but for the dealer it is plus business. By selling a case at a time, and without any service work in dispensing the oil, the station makes a price 10 to 20 per cent under the retail price to the farmer.

Another trend is the packaging of oil in special containers. These containers are in shapes such as funnels, feed pans and chick founts, holding from 3 to 5 gallons of oil. After using the oil the farmer can use the containers around the farm yard. Suppliers package these containers, charging the jobber the cost of the oil and the container, plus a filling charge.

Boudreau Named By Akin

TULSA—A. F. Boudreau has been named sales manager of the Akin Gasoline Co., Tulsa natural gasoline brokerage company. Boudreau succeeds A. J. Pfister, who retired to his ranch in Arkansas.

Boudreau was partner in the St. Louis brokerage firm of Boudreau and Niece. Prior to this partnership he was with Danciger Oil & Refineries, Inc., and Standard Oil Co. (Indiana).

Aerial view of the Riverside Laboratories of Universal Oil Products Co., where a huge amount of original research is carried on continuously, under the direction of a large staff of chemists and engineers

In three months the Clifford service station, in Elyria, has been raised from everything that a station should not be to near the top notch as far as cleanliness and appearance is concerned. New floors, wood panel walls and paint have been put on in the four months Clifford has been in charge of the station

Station Rating 99 Found In NPN Inspection

By M. G. Van Voorhis

N. P. N. Staff Writer

ALL the traditions of Dutch cleanliness were verified, in the service station of the Brilliant Oil Co., at Elyria, O., when a NATIONAL PETROLEUM NEWS editorial staff man showed up entirely unexpectedly to check the station under an NPN Service Station Inspection form. The highest score for any station so far checked over in an NPN inspection, 99, resulted.

Although there are on duty at the station three or four attendants to keep the property and its equipment spic and span, their duties keep them out on the drive serving cars a good share of the time and they also look after a bulk plant located just across the railroad tracks at the rear of the station.

Also deserving of special mention is the Gulf station operated by Ed Marsh at Middle and 5th, in Elyria. A station of beautiful architecture and setting, it is one of two stations of nine visited which were given scores above 95.

As in last week's article covering the inspection of ten Cleveland stations, the average rating was between 90 and 95 by the NPN inspection forms. Demerits were noted on a wide variety of items. Among nine stations inspected, the items most commonly sub-standard involved underground tank vent screens, stoppers in wash bowls of rest rooms, housekeeping in the lubritorium, too low powered lights, and uncleared space around compressors.

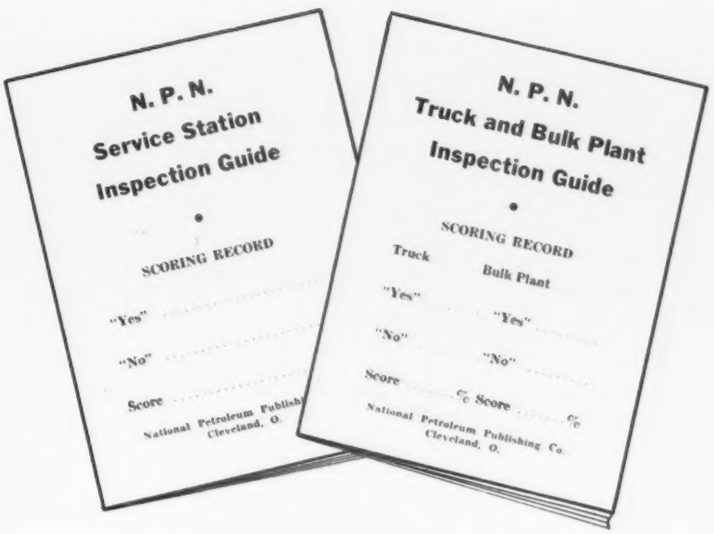
More vent screens were found lacking than among the ten stations reported on last week. On questioning the operator of one station about the absence of screens, he stated his belief that the one-inch pipe used for the purpose acted as a flame cooler and prevented flame from passing down the pipe. Several instances of fires at the vents were cited as evidence that fire does not pass down the vent pipe in the absence of screens. The use of screens also is recommended in the latest proposed ordinance of the National Fire Prevention Association.

Lubritorium housekeeping was generally excellent in the stations visited, but in some instances, instead of cleaning up after each job, the cleanup is left to a more convenient time. In the one or two instances observed the evidence pointed to procrastination rather than necessity for this delay. Only in one instance was station business so brisk that attention to station appearance was out of the question for the time being.

Although all except one of the stations inspected in this group of nine were equipped with lubritoriums and lifts, it should not be inferred that stations without this department or equipment are rated sub-standard. As a matter of fact the station with the highest grade of this group uses the station basement for lubrication pits. In the absence of a lubritorium or lift a station is rated only upon what it does have in the NATIONAL PETROLEUM NEWS inspections. This gives a little higher value to each question but maintenance work is considerably lightened, giving more time for the maintenance of the station, for example, which does not maintain a lubritorium.

On the other hand the section of the inspection form devoted to fire extinguishers is rated zero in the absence of protective equipment and this exerts a considerable influence in the final inspection rating if computed on the basis of an average of the 13 scores provided in the inspection forms.

One of the misfortunes of publishing news is the magnification of the unusual until it appears to be the normal. So it is with a discussion of



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IT'S SIMPLE and Inexpensive to Check your Service Stations, Trucks and bulk plants with N.P.N. Inspection guides—now available in booklet form.

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520 Penton Bldg. • Cleveland, Ohio

The Little Things that Count

● CHECK ups of service stations by the NATIONAL PETROLEUM NEWS inspection forms are bringing to light small points that may not so greatly affect a station's operating efficiency or even its appearance, and yet are points that plainly need attention. The check ups show that the main features of the station, such as gasoline pumps, air standards, compressors and lifts for the most part receive good care and good supervision. In bringing to light these numerous small points, the NPN inspections are proving of most value.

1—For example, in the stations checked and reported on in the accompanying article:

2—Vent screens on fill pipes were found lacking in several instances — a fire hazard.

3—The lighting was found inadequate at certain points for the operators to perform their work with greatest efficiency.

4—Stoppers were missing in the wash bowls in the rest rooms and small items of supplies that might be overlooked in a casual inspection and yet the absence of which would be noted by the visitor.

5—Repair benches in lubritoriums were littered, detracting from the appearance, making it necessary to stop to locate tools and making it easy for tools and supplies to be lost.

Another article on service station check ups under the NPN Service Station Inspection forms was published in the June 22nd issue, page 25.

service station inspections. In throwing light into the dark corners, the high ratings of stations are put in a dim light, and, speaking of dim lights suggests a common practice of cutting upkeep expense at stations by the use of sub-standard lighting and thus not allowing the ninety odd per cent of perfect maintenance to sell itself.

To bring out the conditions on the credit side of the ledger, as a result of this latest inspection, not a single pump at any of the nine stations inspected was substandard. Not one driveway was open to criticism. Building exterior scores of eight of the nine stations average 98. Although rest room scores averaged lower than other divisions of service station maintenance, it can be repeated, as in the ten stations discussed in last week's issue, that this is due more to lack of small items of equipment such as soap and soap containers, clothes hooks, mirrors, door locks, and bowl stoppers than to lack of cleanliness. It was notable that whatever uncleanliness was found, in all but one instance, was the kind that the last customer might have made and not the kind that had been present for days.

Building interiors were found to be surprisingly free of dust, grease, soot and cobwebs and usually in very good order. Dirty windows were exceptional either in the front or side of the station. Unnecessary signs, charts and pictures were not common in any station and lighting fixtures were generally in good condition. The average lubritorium score was identical with the average score for the stations as a whole. Orderliness was the rule for every accessory to lubrication except the repair bench which was, more often than not, littered promiscuously with tools and parts.

The first instance of a slow lift was found during these inspections and this was the result of too small capacity in the compressor. Lifts, along with other mechanical equipment, were found in most instances to be in the care of oil company owners of the property and not of the operators who had leased the stations. Under these circumstances routine inspections and repairs appeared to be more regular than where responsibility rested on operators.

However, there is another side to this story. In a few instances where operators had a little more responsibility the equipment was older and the owners less solicitous of its care. Operators' requests for repair service were as much neglected as the operators' own neglect of the condition of equipment. Failure to provide efficient equipment in stations is a handicap to station lessors, is the observation of this inspector.

One of the commonest factors lowering scores on lighting was the lack of hinged poles for flood lights. This is evidently not an important item unless it prevents proper maintenance of lights and reflectors. In all stations visited this appeared to be no preventative to clean light bulbs and reflectors. Lack of pit and lift lights cut the scores of some stations. The opinion of one operator after using lift lights was that he preferred extension lamps for better service and light.

Lack of fire extinguishers again seriously cut the scores of two stations and again they were at stations where the potential damage from fire would be greatest. Fire prevention, of course, is the more important and the scores of these stations showed that precautions had been taken, except for the absence of extinguishers.

Air service outlets were found to be in working order in all cases, properly placed to prevent obstruction of drives, and gauges were said to be accurate. Heating plants were generally in good condition and, in cases where stoves were used, they had been removed for the summer. A surprising number of coal stoves and furnaces are used at stations in this territory.

This station of the Brilliant Oil Co. at Elyria, O., rated 99 in a NATIONAL PETROLEUM NEWS service station inspection. Anton Wolf, standing in front of office door, is in charge. This display of five-gallon kerosine cans in the window is a special sale feature

On either side of the doorway leading to the Fletcher station office is a rack full of magazines on sale at the station. These magazines cover such subjects as mystery, adventure, and outdoor life

Meeting The Tourist Half Way

IF you want tourist business, you've got to meet them half way.

One quickly arrives at that conclusion after spending a little time at the outpost service station of the Fletcher Oil Co., located at the edge of Bay City, Mich., on the main highway leading north.

What constitutes "meeting the tourist half way?" In general, it means stocking the items he wants and needs for his vacation and having available accessories and lubrication service for his convenience and for the trouble-free operation of his car.

At this Fletcher Oil Co. station it means a building with a vacation atmosphere, built of knotty white pine, and designed with a high canopy on three sides. Gasoline is dispensed from two sides through 11 pumps, while under the canopy at one end is the open-sided lubritorium with a wide entrance and exit that will accommodate the wildest driver.

This Fletcher station also meets the vacationist half way by providing a parking lot for trailers at the rear of the station. Here electrical outlets are supplied and 18 trailers can be accommodated at one time. The rate is $1.50 per week, electric current included.

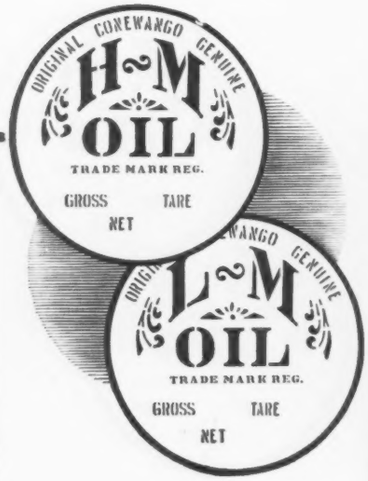
A large sign hangs high at one corner of the station facing a street intersection at an angle to catch the eye of the tourist leaving town. It reads "Fishing Supplies", and meets the tourist more than half way. In other words, this station doesn't "keep" fishing supplies. It advertises them, and sells them.

A complete line of fishing equipment is stocked and displayed in the window facing the drive. Here a fisherman heading for one of Michigan's many lakes or streams may obtain rods, reels, lines, artificial bait, minnow pails, tackle boxes, sun glasses, and fish hooks.

During hunting season a complete line of guns, rifles and ammunition is on sale.

Another indication of how this tour-

The Fletcher Oil Co. tourist service station at the outskirts of Bay City, Mich. Built of knotty white pine, the station is particularly inviting to vacationists because of its rustic design. Note the "Fishing Supplies" sign



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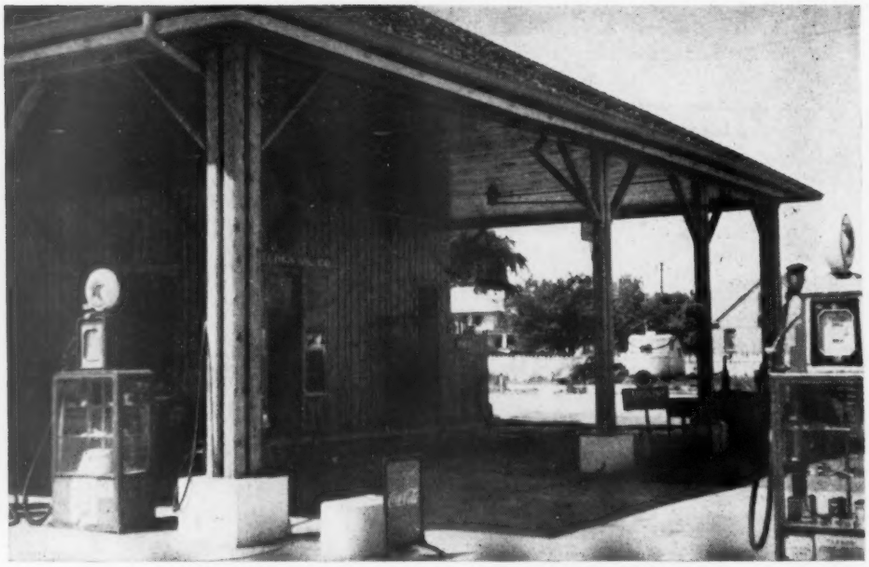

The canopy-covered lubritorium at the Fletcher Oil Co. station. In the rear the company operates an 18-spot trailer camp with provision to plug in electric current

ist station goes more than half way to anticipate the tourists' needs is found in two racks which border the doorway to the building. In these racks are magazines—detective stories, adventure stories, love stories, outdoor stories—and others that would appeal to the motorist on vacation. These magazines are obtained from a local news agency each month, and the Fletcher company realizes about a 33 per cent profit on their sale. Those that are not sold each current month are picked up by the news agency and represent no loss to the oil company. The magazines have been placed in the station this year on trial, having been displayed only two or three weeks.

The canopy-covered open air lubritorium is equipped with a chassis lubricant dispenser tube that swivels from an arm on the ceiling.

This Fletcher station was designed as an experiment in meeting the tourist half way. Its success would indicate that the design is correct.

Seubert Visits His First Job at Whiting Refinery

Edward G. Seubert, president of Standard Oil Co. of Indiana, Chicago, celebrated 40 years of continuous service June 8 by returning to the old Whiting refinery shop to his first job of chipping burrs off castings. Heaverin Douglas, who now has the job, looks on. Mr. Seubert, who has fastened service pins on many employes, himself on this occasion received a pin marking 40 years of continuous service with the Indiana Standard. He actually has a total of 46 years of service with the company but took a year off in 1897

New Patents

Compiled by R. E. Burnham, patent and trade-mark attorney, 511 Eleventh Street, N. W., Washington, D. C., from whom copies may be obtained at the rate of 25c each. State number of patent and name of inventor when ordering.

April 5, 1938

REFINING

Treatment of hydrocarbons—Vladimir Ipatieff and Herman Pines, Chicago, Ill., assignors to Universal Oil Products Co. Filed May 1, 1937. No. 2,112,846, and 2,112,847.

Lubricating oil refining process—Claude F. Tears, Warren, Pa., assignor to Petroleum Processes Corp., Wichita, Kans. Filed Feb. 27, 1936. No. 2,113,008.

Method of distillation—George S. Dunham, Augusta, Kans., assignor to Socony-Vacuum Co. Filed Aug. 17, 1935. No. 2,113,130.

Splitting of hydrocarbons—Mathias Pier, Germany, assignor to I. G. Farbenindustrie, Filed June 14, 1934. No. 2,113,162.

Method of and apparatus for heating petroleum to elevated temperature—Arthur E. Nash, Philadelphia, and James S. Alcorn, Wynnewood, Pa., assignors to Alcorn Combustion Co., Philadelphia. Filed Jan. 31, 1937. No. 2,113,331.

MISCELLANEOUS

Catalytic material and method of producing—Walter A. Schulze, Bartlesville, Okla., assignor to Phillips Petroleum Co. Filed Oct. 6, 1936. No. 2,112,931.

Process for producing resinous reaction products—Frederick E. Frey, and Robert D. Snow, Bartlesville, Okla., assignor to Phillips Petroleum Co. Filed July 23, 1935. No. 2,112,986.

Reactivation of oil decolorizing mediums—Claude F. Tears, Warren, Pa., assignor to Petroleum Processes Corp. Filed Aug. 4, 1936. No. 2,113,010.

Catalyst regeneration—Ward E. Kuentzel, Whiting, Ind., assignor to Standard Oil Co. (Ind.) Filed Oct. 10, 1934. No. 2,113,028.

Manufacture of dibenzyl disulphide, and manufacture of organic disulphides—Robert C. Moran, Wenonah, and George S. Crandall, Woodbury, N. J., assignors to Socony-Vacuum Oil Co. Filed Sept. 21, 1935, and Dec. 3, 1936. Nos. 2,113,092 and 2,113,093.

Oil blending agent—Peter J. Wiezevich, Elizabeth, N. J., assignor to Standard Oil Development Co. Filed Oct. 5, 1934. No. 2,113,150.

Centrifuge unloader—Eger V. Murphree and Edward D. Reeves, Baton Rouge, La., assignors to Standard Oil Development Co. Filed July 19, 1934. No. 2,113,160.

Manufacture of pour point depressors—Webster B. Kay, Chicago, Ill., assignor to Standard Oil Co. (Ind.) Filed Dec. 29, 1934. No. 2,113,179.

Wisconsin Challenges At Golf and Baseball

MILWAUKEE, June 27. — A challenge has been issued by the Wisconsin Petroleum Assn. to the Illinois Petroleum Marketers Assn., the Northwest Petroleum Assn., and the Chicago Oil Men's Club to meet on the golf course and baseball diamond.

The Wisconsin association is holding its third annual golf tournament and "pow wow" July 21 at the Pine Hills Country Club, at Sheboygan, and members of the three associations challenged are invited to join in a tournament.

The Wisconsin jobbers also expect a challenge from major oil company representatives in the state at golf and baseball. Sam Trainor, of Wausau, association president, issued the challenge.

In the evening there will be a stag steak dinner at the club, and Brecke promises "no speeches, special entertainment and the awarding of the many golf prizes."

E. F. Tegtmeyer Retires

CHICAGO, June 28.—E. F. Tegtmeyer, assistant manager of the railway sales division of Standard Oil Company of Indiana, will retire on company annuity July 1 after 23 years of service. He was associated for 26 years with various railroads before joining the Indiana Standard.

SCUFFING
DISCUSSED BY
PROMINENT ENGINEERS

"A lot of damage to rings and bores occurs during the breaking-in period and during periods of high speeds and loads."

"One . . . was scuffing of piston ring faces in new engines particularly when started after becoming cold. In aggravated cases, this scuffing appeared on both pistons and rings."

". . . It was learned that oil, which according to the pictures in the catalogue was supposed to squirt on the cylinder wall, was doing no such thing for quite a period of time. It merely oozed out of the end of the hole, in the meantime gasoline was being supplied in liquid form to the top of the piston by choking, where more than ten sec. was consumed in cranking, the rings were washed clean of oil, so that, when the engine started and speeded, scuffing should have been expected. A lubrication change was devised which carried oil directly to the piston through the cylinder walls under pressure from the gallery line, so that, immediately when pressure was present in this line, oil started to flow to the piston surfaces. This change helped tremendously but, under the rather strenuous conditions of testing used, it did not cure."

Our Answer

"A sample of running-in compound containing Acheson's colloidal graphite — 'dag' Brand — was submitted on April 4th, 1935, for test purposes with respect to its effect on cylinder and piston ring wear in a new engine during the running-in period. Comparative tests were carried out on a plain oil and on oils containing proportions of running-in compound recommended by E. G. Acheson, Ltd. An unused cylinder barrel and an unused piston ring were used in testing each lubricant and the test procedure involved repeated starts from cold, so that a certain amount of cylinder corrosion probably occurred. The results show that during the running-in period the wear with oil containing colloidal graphite was approximately half that observed with plain oil."

For and on behalf of
The R. and S. Committee of the I. A. E.
(Signed) C. G. WILLIAMS,
Director of Research.

ACHESON COLLOIDS CORPORATION
PORT HURON, MICHIGAN

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COLLOIDAL PRODUCTS

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Please send gratis, story on "dag" Colloidal Graphite.

NAME.....

ADDRESS.....

Automotive NOTES AND COMMENTS

● There are many famous quotations such as "Lafayette, we are here", "They shall not pass", "I do not choose to run", and "Please pass the butter".

However, the current one to "take the cake", as they say, was made at the summer meeting of the SAE at White Sulphur. This comment points out that the attitude of automotive engineers toward the lubrication of different types of transmissions and differentials is one of "whole-hearted cooperation rather than arbitrary insistence upon some special specifications, always provided that service station products will meet adequately the lubrication requirements of the mechanism".

What of automobile streamlining?

At the summer meet, the SAEeeees heard on good authority that streamlining alone will not result in an improvement in existing tank mileage (miles per gallon), but that it will have the effect of permitting higher speed operation without seriously penalizing existing tank mileage.

This comes from no less authorities

By John W. Thompson

N. P. N. Staff Writer

than W. E. Zierer and J. B. Macauley, Jr., of the Chrysler Corp. These men also point out in their paper that, in cross-country driving, the effect of speed and acceleration is much greater than is generally realized. For example, say they:

"Taking the roadload economy (miles per gallon) at 20 miles per hour as 100 per cent on a group of 20 1938 cars, ranging in weight from 2330 to 4670 pounds, the economy is reduced to 96 per cent at 30 mph, 87 per cent at 40 mph, 77 per cent at 50 mph, 66 per cent at 60 mph, and 54 per cent at 70 mph. The percentage reduction is greater on the smaller cars and at 70 mph the average of the four smallest cars in the group is 46 per cent and the four largest cars is 64 per cent."

Next time your customers complain about the mileage they get with your gasoline, you probably won't be able to remember this, but wouldn't it be convenient if you could.

* * *

Zierer and Macauley, whose paper is referred to above, make the point that the car owner is concerned with miles per gallon, and that he measures economy by the number of times he has to reach for his pocketbook.

They mention one case where mileage complaints on a certain model were greatly reduced by fitting the car with a larger gas tank.

This may explain, in a way, why some people become wealthy and others don't.

* * *

Engineers and others in the transportation field will witness improvements in efficiency in truck design during the next few years "which are almost beyond present comprehension", according to Charles B. Bohn, president of the Bohn Aluminum and Brass Corp.

"There is no need for a two-ton motor truck to weigh two-tons in itself", he says. "With only a two-ton payload the tires and engines should not

PENNSYLVANIA 100% LUBRICANTS

for YOUR OWN BRAND NAME

When purchasing compounded motor oils, Bright and Cylinder Stocks, and all grades of neutral oil, it is necessary to secure products with a low carbon content, and a good cast.

Particular buyers throughout the years have been able to depend on all materials shipped from our refineries.

Pennsylvania Motor Oils are known to be of the highest quality obtainable. — Why not let us supply you with the best?

JAMES B. BERRY SONS' CO., INC. OIL CITY, PA.

Branch Offices: New York City; Chicago, Ill.; Boston, Mass.; Philadelphia, Pa.; Houston, Texas; London, England; Hamburg, Germany; The Hague, Holland.

Refineries: Oil City, Pa.; Emlenton, Pa.; Farmer's Valley, Pa.; St. Mary's, W. Va.
Ocean Terminals: Baltimore, Md.; Tiverton, R. I.; Dorchester, Mass.; Carteret, N. J.; Edgewater, N. J.; Glastonbury, Conn.; Philadelphia, Pa.

be required to carry four tons of weight. With the new metals and methods of construction that are now available, such a transportation unit will soon be obsolete. In fact, if we take the changes made over the past five years in the direction of lightness with actual gains in strength and durability, we would see that today we stand in the midst of an extremely rapid change in practice."

Mr. Bohn refers to aluminum, magnesium, and other alloys.

* * *

Based on the fact there has been relatively little change in total car ownership during the past ten years, the National Automobile Dealers Assn. at its convention in Detroit last spring, expressed the opinion that apparently the saturation point in automobile sales has been reached, and that for the present the industry must rely on replacement demand.

Not many years ago the ice box market was saturated, too. Then the electric refrigerator jumped in. The electric clock gave a shot in the arm to an industry which had already supplied nearly everybody with clocks.

Our bright-sayings department interrupts to remark that saturation is a matter of consumption, but that there is no saturation of desire.

* * *

Now if you were driving along the street at 3 AM minding your own business, and a personable young man in a white coat stepped out from the curb, motioned to you to stop, and then handed you a balloon and asked you to blow it up, what would you think?

That's right, you would probably think the personable young man was a bit wacky from imbibing too much fly spray. But as a matter of fact, he would probably be a young scientist trying to find out if you were under the influence of too much Four Star Plumbers Delight or Tiger Rose Brew.

This test was made recently on early hour motorists in Chicago by the Northwestern University Traffic Institute to determine the extent of drinking among drivers. The motorist blows up the balloon and the inspector runs with the breath sample to a nearby trailer where it is tested to determine the extent of the motorist's "glow".

As a result of the survey, it was found that the peak for driving after drinking is reached between 3 and 4 o'clock on Sunday mornings when it was found that almost every driver on the street had had at least one drink. The low point for driver-intoxication was found to be about 10 AM.

Of more than 2000 drivers sampled at all hours of the day or night, only 24 drunk or sober, turned down the offer of balloon-blowing.

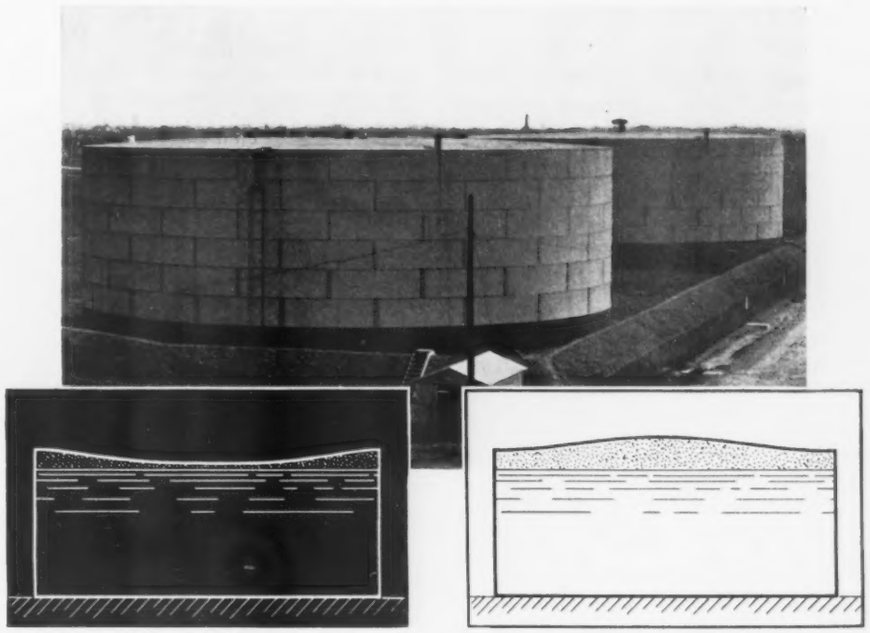
* * *

At 80 miles per hour, the spark arrives in Cadillac and LaSalle cylinders with an accuracy 1/15,000th of a second.

A microscopic camera lens in the

A SIMPLE PRINCIPLE

that has saved thousands of dollars for Oil Marketers



WHAT could be simpler?—a tank that will expand as the vapor in it expands under the noonday sun and contract as the vapor contracts during the cool of night. The Wiggins Breather Roof does it merely by being so constructed that it can flex up and down with every change in the volume of vapor within the tank.

The soundness of this simple solution for one of the oil industry's most common problems has been demonstrated by years of successful service in all parts of the country. The above picture shows two new 82,000-bbl. Wiggins Breather Roof Tanks used for gasoline storage by the Shell Petroleum Corp. at Detroit.

The field of application for the Wiggins Breather Roof is broad but definite. It is recommended for tanks 60 ft. in diameter or larger that are kept full or nearly full most of the time. This includes standing storage tanks for all grades of oil that do not boil at ordinary atmospheric temperatures. For greater vapor capacity or smaller tanks, the Wiggins Balloon Roof is recommended and for working tanks, the Wiggins Pontoon Roof. Complete information on request. Address our nearest office.

Chicago Bridge & Iron Company

Cleveland	2206 Rockefeller Bldg.
Chicago	2125 Old Colony Bldg.
New York	3345—165 Broadway Bldg.
Philadelphia	1614—1700 Walnut Street Bldg.
Boston	1516 Consolidated Gas Bldg.
Detroit	1513 Lafayette Bldg.
Dallas	1439 Liberty Bank Bldg.
Birmingham	1534 N. Fiftieth Street
Houston	2919 Main Street
Tulsa	1607 Hunt Bldg.
San Francisco	1060 Rialto Bldg.
Los Angeles	1422 Wm. Fox Bldg.

FABRICATING PLANTS in Birmingham, Chicago and Greenville, Pa.

Cadillac metallurgical laboratory can magnify the head of a pin so large that you could build a five-room bungalow on the photograph and have enough space left for a lawn and garden.

Stroboscopes in the Cadillac engineering department can stop visual action to the extent that you could read a newspaper pasted on the tip of a revolving fan, while the fan tip is traveling 250 miles per hour.

* * *

Slowly and surely the Willys organization at Toledo is building strength into its executive staff, strength of names with experience behind them.

In recent months the engineering staff has been bolstered by the addition of two outstanding men in the automotive field. One is Delmar G. Roos, vice president in charge of engineering. Roos is a past president of the SAE and was formerly chief engineer of the Studebaker Corp.

The other engineer is Floyd F. Kishline, assistant chief engineer, and formerly chief engineer of the Graham-Paige Motor Corp. Kishline is well known in the industry for his work on supercharged engines.

In addition to these, William C. Cowling, former general sales manager for the Ford Motor Co., has been made Willys' vice president.

Toledo has the Willys . . . and so do some of the other manufacturers of low-priced cars, if you'll pardon the punto.

* * *

If you have a car, and house it in a rented garage, and drive it 10,000 miles a year, the average cost of operation of that car per mile will be 5.8 cents. The reason we know is that the National Bureau of Standards of the U. S. Department of Commerce said so, and the government should know, shouldn't it.

The government bureaus can tell you many other interesting things, too. They can give you instructions in how to eliminate crab grass, how to iron shirts, how to make cream gravy, or even what to do when the baby comes, thus simplifying life no end.

* * *

An enterprising trailer coach manufacturer, the Covered Wagon Co., has developed a trailer village for a large oil company, and is said to be the first of its kind now being used by an oil company geophysical field crew.

One trailer serves as a kitchen, and can be adjoined to another which is equipped as a mess hall. Another trailer serves as an office; two trailers are dormitories; and still another serves as wash room and bath room. The trailer village is completely self-contained, has its own hot and cold water system, central heating supply, electric light system, and other home comforts. A bottled gas system serves as the central supply for the entire village.

So now we have the village on wheels. One can hardly begin to predict what will turn up next, unless it be a home repair kit for filling the teeth at home.

* * *

The various states use more than 20 different bases in computing registration fees for motor vehicles, so the National Highway Users Conference tells us. Among these are horsepower, gross weight, value, list price, age, size of tires, number of times registered, number and size of cylinders, kind of power, mileages and type of use.

Our department in charge of cutting remarks wishes to comment that it is well the term "United States" was adopted before the state motor vehicle registration fees were created.

* * *

Our department in charge of asking burdensome questions asks the following:

How long will it be before one type of highly refined mineral oil will serve in both crankcase and transmission, and a mild variation of a hypoid lubricant can be applied to rear axle, chassis points, water pump, steering gear, and wheel bearings—with complete lubrication needed only once every 5000 miles?

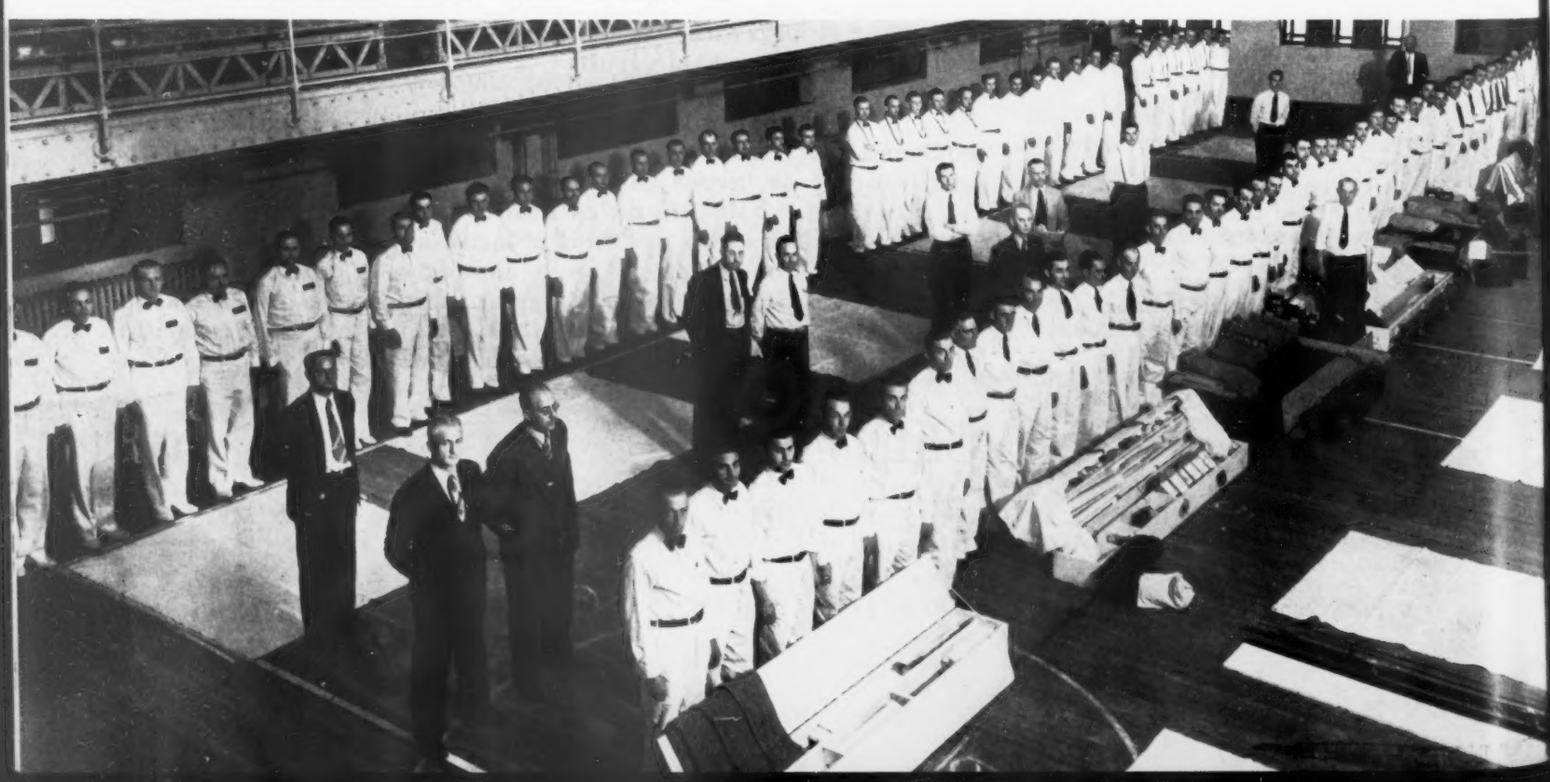
When this column again appears we will ask another question, equally upsetting. What will it be? Watch for our next performance.

Oil Company Teams Compete in First-Aid Contest

Thirteen oil company first aid teams competed in this year's contest of the Department of Fire and Safety of the National Petroleum Association, held June 15 in the gymnasium of the Cleveland Athletic club. The winning team, Kendall Refining Co. No. 1 team, is the group of six nearest the camera in the front row. Continuing by sixes in the front row are teams of Pennzoil, Sohio No. 2, Quaker State (Farmers Valley), Sohio No. 1 (tied for first place, second in tie problem, Hyvis, and James B. Berry.

Six teams in the back row are, Sinclair, Kendall No. 2, Kendall No. 3, Socony Vacuum, United Refining (tied for first place, third in tie problem), and Socony Vacuum.

Judges for the contest were in charge of W. J. Fene, Pittsburgh, U. S. Bureau of Mines engineer, who is holding the papers in the center of the picture, and Dr. A. L. Murray of the bureau who is standing in front of Mr. Fene. Second from the left, directly back of the winning team, is Jack Lewis, Cleveland, Mine Safety Appliances, Inc., who made the arrangements for judging the contest. Contest judges included representatives of the Bureau of Mines, Mine Safety Appliances, Inc., and American Telephone and Telegraph Co.



"From a Can of Grease to a Trainload of Gasolene . . ."

Cities Service Oil Company supplies every petroleum need—Offers dealers a complete line of quality products and proved-for-profit services

CITIES SERVICE OIL COMPANY

Chicago	Kansas City
New York	Fort Worth
Cedar Rapids	Tulsa
Boston	Milwaukee
St. Paul	Cleveland
Grand Forks	Detroit

CITIES SERVICE OIL COMPANY, LIMITED
Toronto, Ontario

ARKANSAS FUEL OIL COMPANY
Shreveport, Louisiana

CITIES SERVICE

OIL is our business—every phase of it—Production, Refining, Transportation and Distribution. Behind the activities of our 7 giant refineries is a history of 75 years experience. Small wonder that today the rich resources and facilities behind Cities Service products provide the basic merchandising methods for 16,000 outlets in 38 states.

Cities Service products—diverse, dependable and profitable—have won the wide public acceptance they deserve. But quality products of immense popularity are only part of the story. Exclusive Cities Service equipment gives dealers the advantage of offering exclusive services. Your sales efforts are supported by expert company cooperation.

The only national full hour radio program in the industry—The Cities Service Concert—entertains millions every Friday night—influences them to buy the products you sell.

When you sign up to sell Cities Service products, you're set to build a money-making business. Get *all* the facts today.

OILS AND GASOLENES

Radio Concerts every Friday, 8 P. M., E. D. T., WEAF and 44 associated NBC stations.

Assistant Traffic Mgr. For Indiana Standard

CHICAGO — Standard Oil Co. of Indiana has appointed Robert W. Fyfe, associated with western railroads for 23 years, as an assistant traffic manager.

Fyfe came from the Western Classification Committee, is an attorney and a practitioner before the Interstate Commerce Commission. He is experienced in rate adjustments and classifications on oil shipments by pipeline, water and rail in Indiana Standard's territory.

Robert W. Fyfe

ARE YOUR OPERATIONS UP TO PAR?

A GUIDE for profit efficiency of service stations, bulk plants and trucks is available at a low cost in N.P.N.'s Minimum Profit Standard—now in booklet form. If you have been wondering about your company's operations, here's a chance to make a check.

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25 cents each for single copies
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10% discount on lots of 100 or over

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TRADEMARKS

The following are trademark applications pertinent to our field pending in the United States Patent Office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Munsey Building, Washington, D. C., trademark specialists.

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Published April 12, 1938

PECO C. Ser. No. 393,878. The Standard Transformer Company, Warren, O. Filed June 9, 1937.

For transformer Oil-i.e., Oil used with oil-immersed transformers.

ADROL. Ser. No. 402,894. Continental Oil Company, Ponca City, Okla. Filed Feb. 10, 1938.

For lubricating oil.

CONOGA. Ser. No. 402,896. Continental Oil Company, Ponca City, Okla. Filed Feb. 10, 1938.

For lubricating grease.

DARMIL. Ser. No. 402,897. Continental Oil Company, Ponca City, Okla. Filed Feb. 10, 1938.

For lubricating oil.

JOCOLOG. Ser. No. 402,899. Continental Oil Company, Ponca City, Okla. Filed Feb. 10, 1938.

For lubricating grease.

NEAX. Ser. No. 402,901. Continental Oil Company, Ponca City, Okla. Filed Feb. 10, 1938.

For lubricating oil.

DISCOL. Ser. No. 402,938. The Distillers Company Limited, Edinburgh, Scotland. Filed Feb. 11, 1938.

Liquid fuel.

* * *

Published April 19, 1938

AN-GLO-LITE in oval. Ser. No. 398,304. Angelo Products Co., Stamford, Conn. Filed Oct. 9, 1937.

For candles.

RESOLUTE PING PROOF. Ser. No. 399,476. Resolute Oil Corporation, Great Falls, Mont. Filed Nov. 8, 1937.

For gasoline.

FARMOFUEL in diamond-shaped figure. Ser. No. 403,248. Farmo Fuel Corporation, Shreveport, La. Filed Feb. 21, 1938.

For gasoline and fuel oil.

New Equipment

AND THE MANUFACTURERS

NEW HANDBOOK—"How to Sell in Corrugated Shipping Boxes" is the title of a new handbook prepared by the Hinde & Dauch Paper Co., the sixth in a series on packaging. Copies may be secured free from the company's headquarters at Sandusky, O.

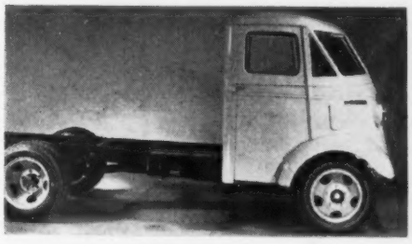
* * *

GASOLINE PUMP HOSE—A new smooth-tube, rubber-covered gasoline pump hose, Type 72, has been introduced by the B. F. Goodrich Co., Akron, Ohio. This hose features an all-Prenite gasoline-proof tube, a rubber cover compounded with Prenite for maximum resistance to oil, sunlight, abrasion, and a reinforcement consisting of two plies of new "high density" cord.

Static bond is provided by a spiral winding of non-corroding flexible stranded wire between the two plies of braided cord. This hose is offered in ¾ and 1-inch sizes, and is available in lengths up to 500 feet.

* * *

CAB-OVER-ENGINE—A new cab-over-engine design for Dodge 1½ and 2-ton chassis has just been announced by the Dodge Division of the Chrysler Corp. The cab is built by Montpelier Manufacturing Co. In both chassis sizes, approximately 28 inches of additional loading space is provided without increased wheelbase length. Addi-



tional features claimed for the unit include a heavy duty front axle with large spindles and bearings, spring equipment and larger capacity radiator core. Vacuum suspended booster brakes and auxiliary springs are standard equipment on the 2-ton unit and available as extra equipment on the 1½-ton chassis.

* * *

CORRECTALITE — A new type of lighting, semi-direct, has been incorporated into a new lighting fixture for display rooms, station offices and service areas by the Holophane Co., 342 Madison Ave., New York. The light controlling element consists of two parts—a prismatic reflector and a bottom bowl-shaped refracting member in which there is a removable plate to permit easy relamping.

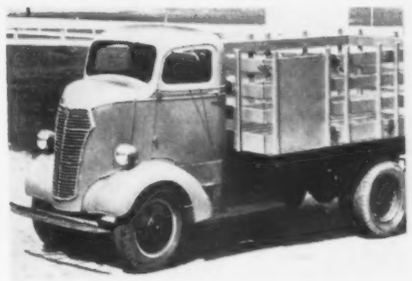
* * *

NEW HEATER—A new pot-type oil heater, producing 66,000 B.t.u. of available heat per hour, has been added to Perfection Stove Co.'s line of Superfex oil burning heaters.

It is of the heat-director type, with adjustable shutters on three sides, supplying both radiating and circulating heat and also directing heat downward to warm the floor. At high flame it is said to burn 0.67 gallon of fuel oil, and at low flame 0.16 gallon per hour.

The new heater is designed to heat 9400 cubic feet of space in buildings of average construction in territories where the temperature seldom drops below 20 degrees above zero, and 6600 cubic feet where zero weather is not infrequent.

CAB-OVER-ENGINE—Chevrolet enters the cab-over-engine field with a cab made by Montpelier Manufacturing Co. This unit is now available on the three wheelbases of the Chevrolet 1½-ton chassis. Accessibility of the engine for quick servicing and maintenance operations is provided by a forward-



tilting hood and easily removable floorboards. Remote control gear shift and brake levers eliminate the necessity of dividing the front seat.

The Chevrolet-Montpelier unit is available in three wheelbases, 108-inch, 131½-inch, and 157-inch. The company states that, by using one of these units, bodies ordinarily used on a 157-inch wheelbase chassis can be used on a 131-inch chassis, all major units being standard Chevrolet units.

BRADFORD OIL REFINING COMPANY

Announces the completion of its

New Lubricating Plant

Latest improved type of equipment and process
Highest quality of products

Refined exclusively from

Famous Bradford, Pennsylvania Premium Crude

We offer:

HIGH FLASH CYLINDER STOCKS
SOLVENT DEWAXED BRIGHT STOCKS
NEUTRALS — MOTOR OILS

In tank cars, drums and cans

We solicit your inquiries

100% PURE PENNSYLVANIA OIL

BRADFORD OIL REFINING COMPANY
BRADFORD, PENNSYLVANIA

LET'S GET DOWN TO BRASS TACKS!

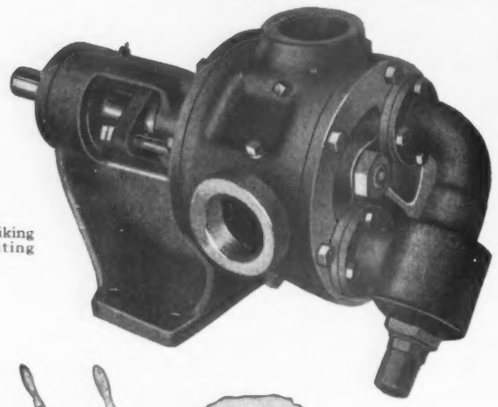


Fig. 120 — Viking Truck Mounting Unit

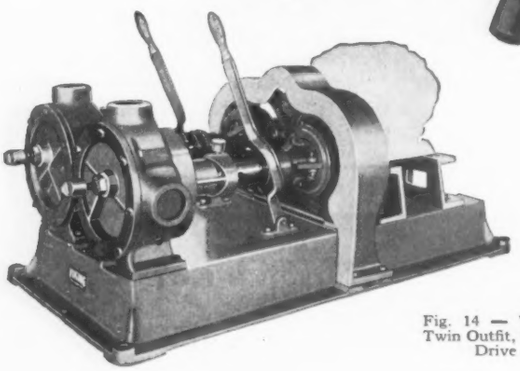


Fig. 14 — Viking Twin Outfit, Motor Drive

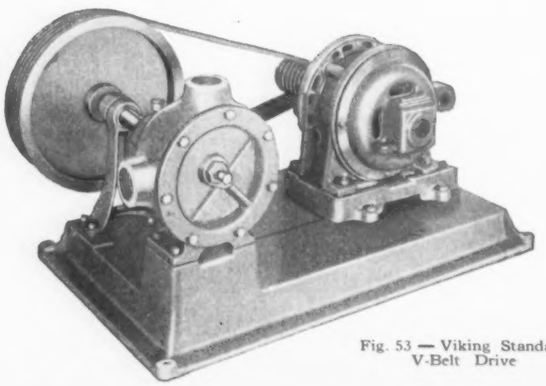
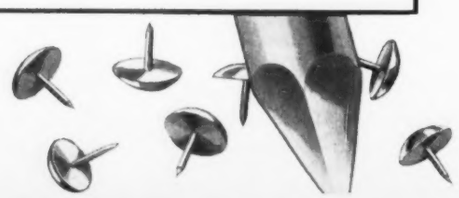


Fig. 53 — Viking Standard V-Belt Drive

WE REALIZE that busy pump buyers haven't any time for loose talk. Here is the story of Viking in fact form:

1. Viking has been building better pumps for more than a quarter of a century.
2. 700,000 Viking Rotary pumps have been installed throughout the world.
3. The famous Viking 27 year old principle of "only 2 moving parts" has been copied by practically every rotary pump manufacturer. (It MUST be good to be copied.)
4. Viking Pumps are specifically designed for the efficient handling of petroleum products. (You'll find more Viking Pumps used in the Petroleum Industry than any other make.)
5. The Viking line is complete in sizes, styles and mountings.

Write today for complete bulletins on Viking Rotary Pumps for the Petroleum Industry.



VIKING PUMP COMPANY
CEDAR FALLS, IOWA

Markets

At A Glance . . .

MID-CONTINENT: Active inquiries indicate kerosine tight.
MID-WESTERN: Gasoline prices advance another 0.125 cent.
EASTERN: Gasoline prices hold; kerosine lower.
PENNSYLVANIA: Gasoline lower; Michigan competition blamed
COASTAL: Export sale of gas oil cargo reported at 3.5 cents.
CALIFORNIA: Some independent refiners advance gasoline.

Mid-Western

N. P. N. News Bureau

CHICAGO, June 27. — Continued tightness in the Mid-western gasoline market was reported during the past week. Prices were advanced another 0.125 cent. Minimum quotations for low octane gasoline were held at 4.625 cents and 70-72 (regular) at 5.125 cents. Two marketers reported withdrawing from low octane gasoline market due to scarcity of supplies, with movement of gasoline from the Southwest said to be negligible.

Some marketers reported increased demand in view of July 4th holiday. As the week closed, however, gasoline inquiry was said to have been hampered somewhat by unfavorable weather conditions. Good contract movement was reported generally.

Lower inventories, particularly on straight run gasoline, were reported by majority of Michigan refiners during the past week. Outstate shipments of this product were generally said to be good, with a considerable portion moving to Illinois and Indiana. Some refiners, however, said they were restricting major share of gasoline to instate shipments where more attractive prices could be obtained. Higher anti-knock grades were also reported active.

Kerosine movement was spotty, Chicago resellers stated last week, with no particular interest shown in this product. Good grades of tractor fuel, however, were still actively sought, they said. Current takings of Michigan kerosine were satisfactory according to most refiners, with prices reported unchanged.

Range oil shipments were slow with quotations at 3.75-3.875 cents reported.

Mid-Continent

N. P. N. News Bureau

TULSA, June 27.—Mid-Continent kerosine—termed by some traders the "forgotten product"—snapped out of its lethargic state last week as active inquiry revealed the tightness of available supplies, according to reports.

Higher prices were reported bid for the 41-43 w.w. grade. Tractor fuel and third grade gasoline also benefited by increased farming activity that sent consumption soaring, reports indicated.

As the week closed, majority of refiners reported 0.125 cent advances in all grades of U. S. Motor gasoline. Third grade was generally quoted at a low of 4.75 cents, while quotations on 70-72 octane were 5.5 cents and higher on a Group 3 basis. Advances late last week, according to several refiners, marked the advent of "break even" prices in the Mid-Continent, although they said prices had not advanced sufficiently to put gasoline in the black.

Clearing weather was said to have stimulated motoring and increased motor fuel inquiries. Jobber purchases continued heavy, with broker activity about normal, according to reports. Inter-refinery purchases were said to reflect the lack of gasoline storage at many Mid-Continent plants.

After almost three weeks of unchanged prices, Oklahoma Grade 26-70 natural gasoline prices showed signs of advancing, reports indicated. Sales late in the week were reported at 2.25 cents Group 3, which was 0.125 cent above previous prevailing prices. Texas natural was active, although prices failed to react upward last week, according to reports. Manufacturers expected the July demand upswing to develop earlier this year.

Unsettled Mid-Continent and South Texas lube prices continued to overshadow the market for these products. Shipments for these products as such, were reported light, although blended oil deliveries were fairly heavy. Wax was reported active, with Mid-Continent supplies said to be limited.

N. P. N. Gasoline Index

	Dealer T.w. Cents per	Tank Car gal.
June 27	10.18	6.18
Month ago	10.16	5.86
Year ago	10.52	6.74

Dealer index is an average of "undivided" dealer prices ex-tax, in 50 cities.

Tank car index is a weighted average of 12 wholesale markets for regular-grade gasoline.

Eastern

N. P. N. News Bureau

NEW YORK, June 27.—The higher levels which tank car gasoline prices reached in key markets along the eastern seaboard the second week of June appeared firmly held the past week, according to reports of the New York trade. Kerosine continued its recent downward trend and prices were sharply lower at most terminal points.

Socony-Vacuum Oil Co. late the past week announced a 0.25-cent advance in its base tank car gasoline prices at New York harbor and also stated that tank car and tank wagon prices would be advanced in upper New York state and Connecticut, all effective June 28. The announcement came too late in the week, however, for traders to determine its possible effect on the general market.

Reports of most traders indicated optimism over the current tank car gasoline price situation. While the vast majority of buyers are under contract, some buyers have the option of turning to the open market if they find it to their advantage, according to reports. In times of a weak market there has been considerable shading of tank car quotations to obtain this business, but currently this practice is at a minimum, traders said.

Except for the Baltimore district, tank car gasoline quotations were reported generally unchanged. All Baltimore suppliers reported advancing their quotations for 65 octane and above to a minimum of 6.75 cents.

Reductions in kerosine tank car prices the past week were widespread and rather sharp in some districts. At New York harbor and several other northern seaboard points, a number of companies reported 0.625-cent reductions in their quotations.

Water white was offered at 4.625 cents in tank cars, 4.5 cents in barges at New York harbor, Philadelphia, Baltimore, Norfolk and Charleston. In the Boston and Providence districts, most companies said they were asking 5 cents.

Pennsylvania

N. P. N. News Bureau

CLEVELAND, June 27.—Gasoline eased off slightly while other products generally were reported unchanged in the western Pennsylvania refinery market the past week. Open market trading of most products was light.

Increased competition from Michigan gasoline was blamed by some sellers for the easier trend in Pennsylvania U. S. Motor. Two lower field refiners reported reducing their quo-

REFINERY TANK CAR MARKETS

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days). Prices in cents per gallon except heavy fuel oils in dollars per barrel of 42 gallons, tank car lots, f.o.b. refineries in districts designated, except where otherwise noted. Inter-refinery and export prices not included, unless so stated in the respective markets. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude. Unless otherwise noted, gasoline octane ratings are determined by C.F.R. Motor method, A.S.T.M. D-357-33T; and lubricating oil specifications determined according to A.S.T.M. methods, unless otherwise noted.

Gasoline

Prices Effective	June 27	June 20
OKLAHOMA		
U. S. Motor: (Octane L-3)		
62 oct. & below	4.75 – 5.00	4.625– 4.75
63-66 oct.	5.00 – 5.125	4.75 – 5.125
67-69 oct.	5.25 – 5.50	5.125– 5.375
70-72 oct.	5.50 – 5.75	5.375– 5.625
60-62, 400 e.p.	4.75 – 4.875	4.625– 4.75
WESTERN PENNA.		
Bradford-Warren:		
Motor gasoline:		
U. S. Motor (58-62°)	5.375– 5.50	5.375– 5.50
Min. 65 oct.	6.50	6.50 – 7.00
Min. 70 oct.	(e)7.00	
Other districts:		
Motor gasoline:		
U. S. Motor (58-62°)	5.25	5.25 – 5.375
Min. 65 oct.	6.50 – 6.625	6.50 – 6.625
CENTRAL MICHIGAN (a)		
Str.-Run Gasoline	(c) 5.00 –5.625	(c) 5.00 –5.50
U. S. Motor: (Octane L-3)		
67-69 octane	(e)7.50	(e)7.50
70-72 octane	8.00 – 8.25	8.00 – 8.25
CALIFORNIA (3c tax to be added if used in state)		
U. S. Motor:		
54-58, for instate shipment	(g) 7.25– 9.25	7.25 – 9.25
54-58, for outside state shipment	7.25 – 9.00	7.25 – 9.00
58-61, 375-400 e.p., 65 oct. & above	7.75 – 9.75	7.75 – 9.75
N. TEX. (b)		
U. S. Motor: (Octane L-3)		
62 oct. & below	4.75 – 5.00	4.625– 4.875
63-66 oct.	4.875– 5.50	4.875– 5.25
67-69 oct.	5.125– 5.625	5.125– 5.625
70-72 oct	5.50 – 6.00	5.375– 5.75
60-62, 400 e.p.	(e) 4.625– 4.75	(e)4.625
KANSAS (For Kansas destinations only)		
U. S. Motor: (Octane L-3)		
62 oct. & below	5.00 – 5.25	4.75 – 4.875
70-72 oct.	5.75 – 6.00	5.625– 5.75
W. TEX. (b)		
U. S. Motor: (Octane L-3)		
62 oct. & below	4.875	4.75 – 4.875
63-66 oct.	5.125	5.00 – 5.375
67-69 oct.	5.50	5.375– 5.75
70-72 oct.	5.75	5.625– 6.125
E. TEX.		
60-62, 400 e.p.	4.50	4.50
N. LA. (For shipment to La. & Ark.)		
U. S. Motor: (Octane L-3)		
62 oct. & below	4.625– 4.75	4.625
63-66 oct	(e)5.00	(e) 4.875-5.00
67-69 oct.	(e)5.25	(e)5.25
70-72 oct.	5.75	5.75
ARKANSAS (F.o.b. Ark. plant of one refiner, for shipment to Ark. & La.)		
U. S. Motor: (Octane L-3)		
62 octane & below	4.75	4.75
67-69 oct	5.25	5.25
OHIO (Quotations of S. O. Ohio. Delivered anywhere in Ohio).		
U. S. Motor	8.375	8.375
Above 65 oct.	8.625	8.625

Natural Gasoline

(Prices to blenders on freight basis shown below. Shipments may originate in any Mid-Continent manufacturing district.)

F.O.B. GROUP 3		
Grade 26-70	2.25	2.125
F.O.B. BRECKENRIDGE		
Grade 26-70	2.00	2.00
CALIFORNIA (F.o.b. plants in Los Angeles basin)		
75-85, 350-375 e.p. for blending	6.50 – 7.00	6.50 – 7.00

Kerosine

Prices Effective	June 27	June 20
WESTERN PENNA.		
Bradford-Warren:		
45 w.w.	5.125– 5.25	5.125– 5.25
46 w.w.	5.25 – 5.375	5.25 – 5.375
Other districts:		
45 w.w.	5.00 – 5.25	5.00 – 5.25
46 w.w.	5.125	5.125
47 w.w.	5.25 – 5.375	5.25 – 5.375
CENTRAL MICHIGAN (a)		
47-49 w.w.	5.00 – 5.25	5.00 – 5.25
OKLAHOMA		
41-43 w.w.	4.25 – 4.375	4.125– 4.375
42-44 w.w.	4.50 – 4.625	4.375– 4.625
KANSAS (For Kansas destinations only).		
41-43 w.w.	4.625	(e)4.375
42-44 w.w.	4.625– 4.875	4.625– 4.75
N. TEX. (b)		
41-43 w.w.	(e) 4.25 – 4.50	(e)4.25 – 4.50
E. TEX.		
41-43 w.w.	(d) 4.00 –4.125	(d) 4.00 –4.125
N. LA. (For shipment to La. and Ark.)		
41-43 w.w.	4.125– 4.50	4.125– 4.50
ARK. (F.o.b. Ark. plant of one refiner, for shipment to Ark. and La.)		
41-43 w.w.	4.625	4.625
CALIFORNIA		
40-43 w.w.	5.00 – 7.00	5.00 – 7.00

Gas *and* Fuel Oils

WESTERN PENNA.		
Bradford-Warren:		
36-40	3.75 – 3.875	3.75 – 3.875
Other districts: (Excluding Pittsburgh District Prices).		
36-40	3.50 – 3.625	3.50
CENTRAL MICHIGAN (a)		
P.W. Distillate	4.50 – 4.75	4.50 – 4.75
No. 3 gas oil, Str.	4.00 – 4.50	4.00 – 4.50
U.G.I. gas oil	3.50 – 4.25	3.50 – 4.25
Fuel Oils (Vis. at 100):		
500-700 Vis.	(d) 2.00 –2.125	(d) 2.00 –2.125
300-500 Vis.	(d) 2.125–2.50	(d) 2.125–2.50
100-300 Vis.	(d) 2.50 –3.00	(d) 2.50 –3.00
OKLAHOMA		
No. 1 prime white	3.75 – 3.875	3.75 – 3.875
No. 2 straw	3.375– 3.625	3.375– 3.625
U. G. I. gas oil	(d) 3.00– 3.25	(d) 3.00 –3.25
28-30 zero fuel	3.25 – 3.375	3.25 – 3.375
24-26 fuel	(e)$0.925	(e)$0.925
18-22 fuel	(d) $0.775-$0.85	(d) $0.775-$0.85
14-16 fuel	(d) $0.70-$0.80	(d) $0.70-$0.80
KANSAS (For Kans. destinations only).		
No. 1 p.w. fuel oil	4.125	4.125
10-14 fuel oil	$0.45 –$0.575	$0.45 –$0.575
N. TEX. (b)		
No. 1 Prime white	(e)4.00	4.00 – 4.25
N. LA. (For shipment to La. and Ark.)		
No. 2 fuel	3.125– 3.375	3.125– 3.375
20-24 fuel	(e) $1.10–$1.15	(e) $1.10–$1.15
16-20 fuel	(e) $0.90-$0.95	(e) $0.90–$0.95
10-14 fuel	(e) $0.80-$0.85	(e) $0.80–$0.85
ARK. (F.o.b. Ark. plant of one refiner, for shipment to Ark. and La.)		
No. 2 fuel	3.625	3.625
28-30 gas oil, zero	3.375	3.375
CALIFORNIA		
San Joaquin Valley:		
Heavy fuel	$0.60 –$0.75	$0.60 –$0.75
Light fuel	$0.75 –$0.85	$0.75 –$0.85
Diesel fuel (per gal.)	3.25 – 4.00	3.25 – 4.00
Stove dist. (per gal.)	3.75 – 6.00	3.75 – 6.00
Los Angeles:		
Heavy fuel	$0.50 –$0.90	$0.50 –$0.90
Light fuel	$0.65 –$1.00	$0.65 –$1.00
Diesel fuel (per gal.)	2.375– 4.00	2.375– 4.00
Stove dist. (per gal.)	2.50 – 6.00	2.50 – 6.00
San Francisco:		
Heavy fuel	$0.95	$0.95
Light fuel	$1.05	$1.05
Diesel fuel (per gal.)	4.50	4.50
Stove dist. (per gal.)	6.50	6.50

Note: All above heavy fuels meet Pacific specification 400; light fuel, spec. 300; Diesel fuels, spec. 200; and stove distillate, spec. 100.

Neutral Oils

Prices Effective	June 27	June 20
WESTERN PENNA. (Refiners report no open spot market sales being made to jobbers and give following as their quotations only.)		
Viscous Neutrals No. 3 col. (Viscosity at 70° F.)		
200 Vis. (180 at 100°) 420-425 fl.		
0 p.t.	15.00 –17.00	15.00 –17.00
10 p.t.	14.00 –16.00	14.00 –16.00
15 p.t.	13.50 –15.50	13.50 –15.50
25 p.t.	12.00 –14.00	12.00 –14.00
150 Vis. (143 at 100) 400-405 fl.		
0 p.t.	14.00 –15.50	14.00 –15.50
10 p.t.	13.00 –14.50	13.00 –14.50
15 p.t.	12.50 –14.00	12.50 –14.00
25 p.t.	11.00 –12.50	11.00 –12.50
SOUTH TEXAS		
Vis. Color		
Pale Oils: (*Vis. at 100° F.*)		
100 No. 1½-2½	4.75 – 5.00	4.75 – 5.00
200 No. 2-3	6.25	6.25
300 No. 2-3	6.75	6.75
500 No. 2½-3½	7.75	7.75
750 No. 3-4	8.25	8.25
1200 No. 3-4	8.75	8.75
2000 No. 4	9.00 – 9.25	9.00 – 9.25
Red Oils:		
200 No. 5-6	6.25	6.25
300 No. 5-6	6.75	6.75
500 No. 5-6	7.75	7.75
750 No. 5-6	8.25	8.25
1200 No. 5-6	8.75	8.75
2000 No. 5-6	9.00 – 9.25	9.00 – 9.25

Note: Red oil prices cover oils with green cast; blue cast red oils are slightly lower in some cases.

MID-CONTINENT (Vis. at 100° F.; F.o.b. Tulsa basis).

Pale Oils: (0 to 10 P.P.) Vis. Color		
60-85—No. 2	5.50	5.50
86-110—No. 2	6.00	6.00
150—No. 3	9.00	9.00
180—No. 3	10.00	10.00
200—No. 3	10.50	10.50
250—No. 3	11.50	11.50
280—No. 3	12.50	12.50
300—No. 3	13.00	13.00
Red Oils:		
180—No. 5	(e)9.00	(e)9.00
200—No. 5	9.50 –10.00	9.50 –10.00
280—No. 5	11.50 –11.75	11.50 –11.75
300—No. 5	(e)11.75	(e)11.75

Note: The following oils, of 15 to 25 p.p., are generally quoted these amounts under 0-10 p.p.: viscous oils, 0.5c; non-viscous, 0.25c. Viscous oils (150-300 vis.), No. 4 color, generally are quoted 0.5c above No. 5 color oils.

CHICAGO (Vis. at 100° F.)

Pale Oils 0 to 10 p.p.: Vis. Color		
60-85—No. 2	7.25	7.25
86-110—No. 2	7.75	7.75
150—No. 3	10.00	10.00
180—No. 3	11.00	11.00
200—No. 3	11.50	11.50
250—No. 3	12.50	12.50
Red Oils:		
180—No. 5	10.00	10.00
200—No. 5	10.50	10.50
250—No. 5	11.50	11.50
280—No. 5	12.50	12.50
300—No. 5	12.75	12.75

Note: Viscous oils, 15 to 30 p.p. are quoted 0.5c lower; 60-85 and 86-110 No. 2 non-viscous oils, 15 to 30 p.p., 0.25c lower. To obtain delivered prices in Chicago, add 0.25c per gal.

Cylinder Stocks

MID-CONTINENT (F.o.b. Tulsa basis).

Bright Stocks:		
190-200 Vis. at 210° D	(e)19.00	(e)19.00
150-160 Vis. at 210° D:		
0 to 10 p.p.	14.25 –16.00	14.25 –16.00
10 to 25 p.p.	13.50 –15.50	13.50 –15.50
25 to 40 p.p.	13.50 –15.00	13.50 –15.00
150-160 vis. at 210° E.	12.50 –15.00	12.50 –15.00

(a) Prices f.o.b. Central Michigan refinery group basis, for shipment within Mich. Shipments may originate at plants outside Central group. (b) For shipment to Texas and New Mexico destinations; Group 3 prices quoted on northern shipments. (c) Excluding Detroit shipment. (d) Nominal. (e) Only one refiner quoting. (f) No price reported. (g) Correct price for May 14 was 7.00-9.25c, instead of 7.00-7.25c as published in May 16 issue.

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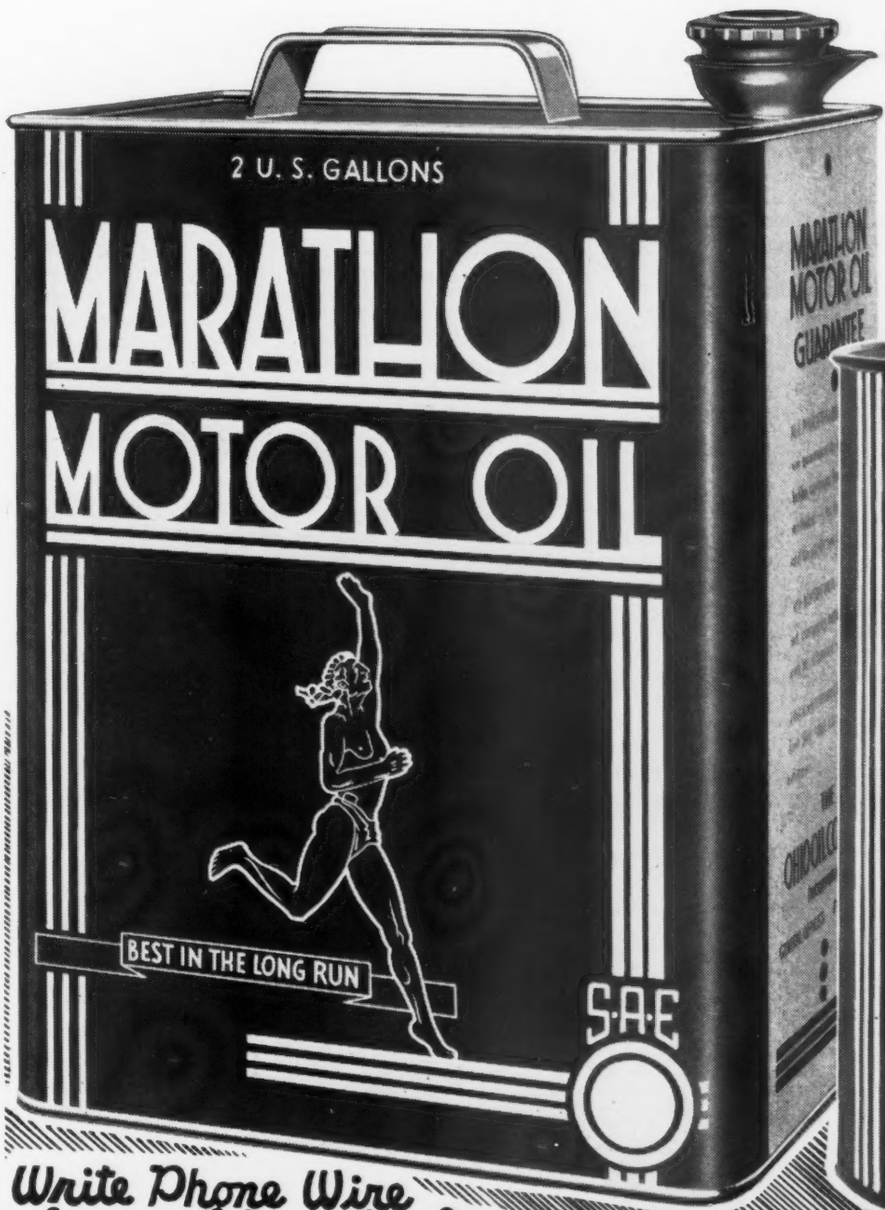

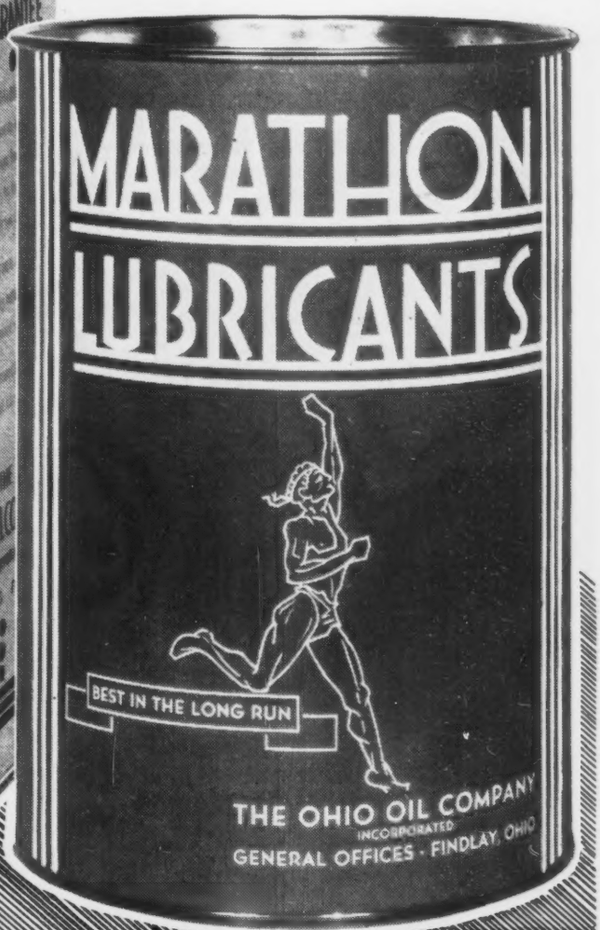

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tations 0.125 cent to 5.25 cents, and while contract shipments continued in fairly good volume, open market demand had slackened considerably, they said.

Reports indicated the upper field gasoline situation remained fairly tight. Few refiners reported offering U. S. Motor in the open market and said they were having no difficulty obtaining 5.375 to 5.5 cents for the small lots they had.

Demand for fuel oil for cracking stock continued heavy and some sellers also reported noticeable improvement in the call from industrial users. One lower field refiner reported being sold up on fuel oil until the middle of July; another said he had only a very small quantity to move and was asking 3.625 cents. Others, however, had small lots for which they were asking 3.5 cents.

Inter-refinery demand for lubricating oils was reported better and prices were slightly firmer, particularly for bright stock, sellers said. No open market jobber sales to jobbers were reported although there was some pickup in contract shipments, according to some sellers. No changes were indicated in jobber quotations.

With lube plant operations curtailed drastically, wax production also was limited and only small lots were being offered in the open market, traders said. Scattered sales of 124-126 white crude scale were reported at 2.2 to 2.25 cents a pound, New York. Some refiners said they were asking prices 0.05 to 0.1 cent higher for August delivery.

Coastal

N. P. N. News Bureau

NEW YORK, June 27.—Aside from an export sale of gas oil, there was little activity reported in the Gulf cargo market the past week.

The gas oil sale substantiated the talk of higher prices for light fuels at the Gulf which has been going the rounds of the trade for the past two or three weeks. Heavy fuels were easier. Prices for other products generally were reported unchanged.

An independent refiner reported making the gas oil sale. It called for approximately 70,000 barrels of minimum 48 diesel index oil at 3.5 cents a gallon for export shipment in July. Late in the week this refiner said he would not sell more oil for less than 3.625 cents.

Sale of another cargo of gas oil with lower diesel index at 3.375 cents was rumored in the trade early the past week but confirmation was lacking. Suppliers generally, however, indicated higher prices for all grades of export gas oil and No. 2 fuel oil for domestic shipment.

Standard Oil Co. of Louisiana announced a 5-cent reduction to $0.75 per barrel in its posted price for Grade

(*Continued on page 60*)

Fuel Oil . . . . .

NEW YORK, June 27.—Widespread price reductions on light and heavy fuel oils were reported in eastern seaboard markets in the week ended June 25. Light oils were down 0.25 to 0.625 cent a gallon, and the heavy oils 10 to 21 cents a barrel.

No. 1 oil was quoted 0.625 cent lower at 4.625 cents a gallon by the majority of suppliers in the northern seaboard districts. Prices for the Nos. 2, 3 and 4 oils generally were reduced 0.25 cent to 4 cents in tank cars. At some points No. 4 oil was offered at 3.75 cents.

Standard Oil Co. of New Jersey early in the week reported a reduction of 10 cents per barrel in its bunker oil and diesel oil prices and by the end of the week, postings at New York harbor generally were $0.95 a barrel for Grade C bunker oil and $1.65 per barrel for diesel oil.

The topheavy inventory position of both light and heavy fuels along the seaboard and the slack demand for all grades were blamed by most observers for the price reductions.

* * *

N. P. N. News Bureau

CHICAGO, June 27.—Light fuels were featured with a somewhat better movement, resale agents reported last week. Small lot shipments were prevalent in this movement, sellers reported as large takings were inadvisable due to uncertainty of present price structure. Michigan prime white distillate was reported scarce by some refiners. Others said major share of this fuel was going directly into storage.

Industrial fuel movement in the Chicago area was still lagging with no appreciable movement reported. Michigan refiners, on the contrary, generally reported more favorably condition in the heavy fuel market. Two refiners said they were moving all their current production while others reported more active interest in these fuels. Road oil movement was said to be exceptionally good having been curtailed for a considerable time due to bad weather.

* * *

TULSA, June 27. — Mid-Continent light fuel oil market was without feature last week as buyers were reported purchasing their requirements in districts nearer points of consumption. Buying generally was reported almost at a standstill as speculative demand failed to materialize, according to reports. Quotations for light fuels have shown little fluctuation, despite lack of buying interest.

Heavy fuel oil offerings were reported less numerous as railroad takings increased in volume. There still was little industrial demand for this product. Shipments to road oil contractors, is said to have increased in some localities, with resultant easing of burdensome stocks.

TANK WAGON MARKETS, HEATING OILS

Prices in Effect June 27, 1938

Following are posted tank wagon prices of various grades of heating oil at the points shown in various territories. Prices are in cents per gallon.

	No. 1	No. 2	No. 4
S. O. NEW JERSEY			
Atlantic City, N. J.	8.0	6.0	6.0
Newark	8.0	6.0	6.0
Annapolis, Md.	....	6.25	....
Baltimore	7.5	6.5	6.5
Washington, D. C.	7.75	6.5	6.5
Norfolk, Va.	7.0	6.0	6.0
Petersburg	7.25	6.25	....
Richmond	7.25	6.25	6.25
Charlotte, N. C.	9.0	8.0	....
Hickory	....	8.25	....
Raleigh	9.0	7.5	....
Charleston, S. C.	8.5	7.0	....
Columbia	9.8	8.3	....
Spartanburg	10.7	9.2	....

	No. 2	No. 3	No. 4
SOCONY-VACUUM OIL CO. INC. (S. O. New York Division)			
New York City	6.50	6.50	6.50
Albany, N. Y.	7.00	7.00	6.50
Rochester, N. Y.	7.50	7.50	7.50
Boston, Mass.	6.50	6.50	6.50
Bangor, Me.	7.50	7.50	7.50
Manchester, N. H.	7.00	7.00	7.00
Burlington, Vt.	8.00	8.00	8.00
Hartford, Conn.	6.50	6.50	6.50
New Haven, Conn.	5.25	5.25	5.25
Providence, R. I.	6.50	6.50	6.50

Note: Prices for No. 1 fuel in Socony-Vacuum territory same as for kerosine which see in tank wagon table for various cities; prices change with kerosine.

	No. 1	No. 2	No. 3	No. 4
ATLANTIC REFINING Cont'd				
Philadelphia, Pa.	7.75	7.00	7.00	7.00
Allentown, Pa.	8.25	7.50	7.50	7.50
Wilmington, Del.	8.25	7.50	7.50	7.50
Springfield, Mass.	9.00	7.50	....	7.50
Worcester, Mass.	9.00	7.50	....	7.50
Hartford, Conn.	9.00	7.50	....	7.50
S. O. OHIO				
Columbus Division and Cleveland	7.50	7.50	7.00	....
City of Lima	8.00	8.00	7.00	....
Rest of Ohio	8.00	8.00	7.50	....

Note: S. O. Ohio prices are for full compartment hose dumps, bucket dumps are 0.5c per gallon higher.

S. O. INDIANA
Stanolex Fuel and Furnace Oils

	No. 1 Fuel	Stanolex Furnace
Chicago	(a)6.5	6.5
Indianapolis	...	(b)7.8
Detroit	...	7.1
Milwaukee	8.4	7.7
Minneapolis	7.8	7.8
St. Louis	7.7	7.0
Kansas City	6.8	6.8

(a) For 400 gals. and over; 150 to 399 gals., 7c; 1 to 149 gals., 8c.
(b) Excluding 4c state tax.
Note: Small-lot deliveries of light fuel oils range up to 2c higher than above quotations.

REFINERY TANK CAR MARKETS

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days) unless otherwise stated. Prices in cents per gallon, except heavy fuel oils in dollars per barrel of 42 gallons, wax and petrolatums in cents per pound in barrels, tank car lots, f.o.b. refineries in districts designated, except where otherwise noted. Inter-refinery and export prices not included unless so stated in the respective markets. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude. Unless otherwise noted, gasoline octane ratings are determined by C.F.R. Motor method, A.S.T.M. D-357-33T; and lubricating oil specifications determined according to A.S.T.M. methods, unless otherwise noted.

Cylinder Stocks (cont'd)

Prices Effective	June 27	June 20
Mid-Continent (cont'd)		
120 Vis. at 210° D		
0 to 10 p.p.	14.50 –15.125	14.50 –15.125
25 to 40 p.p.	(e)14.25	(e)14.25
600 S.R. Dark Green	5.00 – 7.50	5.00 – 7.50
600 S.R. Olive Green	7.00 – 7.50	7.00 – 7.50
631 S.R.	(e)12.50	(e)12.50
Black Oil	3.50 – 4.00	3.50 – 4.00
CHICAGO (Viscosity at 210°)		
Unfiltered Steam Refined:		
140	9.00	9.00
160	10.00	10.00
200	11.00	11.00
Bright stocks, 160 vis. at 210. No. 8 color:		
0 to 10 p.p.	15.75	15.75
15 to 25 p.p.	14.75	14.75
30 to 40 p.p.	14.25	14.25
Ε filtered Cyl. Stock	13.50	13.50

Note: To obtain prices delivered in Chicago, add 0.25c per gal.

Prices Effective	June 27	June 20
WESTERN PENNA. (Refiners report no open spot market sales being made to jobbers and give following as their quotations only.)		
600 S.R. filterable	8.50 – 9.50	8.50 – 9.50
650 S.R.	10.50 –11.50	10.50 –11.50
600 fl.	11.00	11.00
630 fl.	14.00	14.00
Bright stock, 145-155 vis. at 210°, 540-550 flash, No. 8 color:		
10 p.t.	14.50 –15.50	14.50 –15.50
15 p.t.	13.50 –14.50	13.50 –14.50
25 p.t.	12.00 –13.00	12.00 –13.00

Petrolatums

WESTERN PENNA. (In bbls., carloads; in tank cars, 0.5c less)		
Snow White	6.125– 6.25	6.125– 6.25
Lily White	5.125– 5.25	5.125– 5.25
Cream White	4.125– 4.25	4.125– 4.25
Light Amber	2.625– 2.75	2.625– 2.75
Amber	2.375– 2.50	2.375– 2.50
Red	2.00 – 2.25	2.00 – 2.25

Wax

Prices Effective	June 27	June 20
WESTERN PENNA. (In bbls., carloads, New York)		
122-124 A.m.p., w.c. scale	2.20 – 2.25	2.20 – 2.25
124-126 A.m.p., w.c. scale	2.20 – 2.25	2.20 – 2.25
OKLAHOMA (In bbls. or burlap bags, carloads)		
124-126 A.m.p., w.c. scale	2.25	2.25
CHICAGO (In bags, carload lots. Melting points are E.M.P. (A.S.T.M.) methods; add 3° F. to convert into A.m.p.)		
Fully refined:		
122-124	4.25	4.25
125-127	(d)4.35	(d)4.35
127-129	(d)4.45	(d)4.45
130-132	(d)5.10	(d)5.10
132-134	(d)5.35	(d)5.35
135-137	(d)6.10	(d)6.10

(a) Nominal. (b) Only one refiner quoting. (c) No price reported. (d) Same prices quoted in bags or slabs loose.

MID-WESTERN TANK CAR MARKET

(*Prices group 3 basis; origin of shipments unknown*)

Gasoline

Prices Effective	June 27	June 20
U. S. Motor: (Octane L-3)		
62 oct. and below	4.75 – 5.00	4.50 – 4.75
63-66 oct.	4.875– 5.125	4.625– 4.875
67-69 oct.	5.25 – 5.375	4.875– 5.25
70-72 oct.	5.375– 5.625	5.125– 5.375

Kerosine

41-43 w.w.	4.00 – 4.25	4.00 – 4.25
42-44 w.w.	4.125– 4.50	4.125– 4.50

(a) Nominal.

Fuel and Gas Oils

Prices Effective	June 27	June 20
Domestic:		
No. 1 p.w.	3.625– 3.875	3.625– 3.875
No. 1 straw	3.375– 3.75	3.375– 3.75
No. 2 straw	3.25 – 3.625	3.25 – 3.50
No. 3	3.00 – 3.25	3.00 – 3.25
No. 4	Prices discont'd	(a) $1.05–$1.10
No. 5	(a) $0.65–$0.75	(a) $0.65–$0.75
Range oil	3.75 – 3.875	3.75 – 3.875
Industrial:		
No. 4	Prices discont'd	(a) $0.90–$1.05
No. 5	(a)$0.55–$0.65	(a) $0.55–$0.65

Prices Effective	June 27	June 20
Industrial (cont'd)		
No. 6	(a) $0.35–$0.50	(a) $0.35–$0.50
U. G. I. gas oil	2.875– 3.00	2.75 – 2.875

Naphtha and Solvent

Stoddard solvent	5.875	5.875
Cleaners' naphtha	6.375	6.375
V. M. & P. naphtha	6.375	6.375
Mineral spirits	5.375	5.375
Rubber solvent	6.375	6.375
Lacquer diluent	7.375	7.375

DAILY GASOLINE PRICES

Daily range of gasoline prices as reported in PLATT'S OILGRAM (Week Ended June 24, 1938)

	June 20	June 21	June 22	June 23	June 24
U. S. Motor, (Octane Number determined according to L-3 Method in Okla., Texas and Mid-Western Districts):					
62 octane and below:					
Oklahoma	4.625– 4.75	4.625– 4.75	4.625– 4.75	4.625– 4.75	4.625– 4.875
(b)North Texas	4.625– 4.875	4.625– 4.875	4.625– 4.875	4.625– 4.875	4.625– 4.875
West Texas	4.75 – 4.875	4.75	4.75	4.75	4.75
Mid-Western (Group 3 basis)	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75	4.625– 4.875	4.625– 4.875
63-66 octane:					
Oklahoma	4.75 – 5.125	4.75 – 5.125	4.875– 5.125	4.875– 5.125	4.875– 5.125
(b)North Texas	4.875– 5.25	4.875– 5.25	4.875– 5.25	4.875– 5.25	4.875– 5.25
West Texas	5.00 – 5.375	5.00	5.00	5.00	5.00
Mid-Western (Group 3 basis)	4.625– 4.875	4.625– 4.875	4.75 – 4.875	4.75 – 5.00	4.75 – 5.00
67-69 octane:					
Oklahoma	5.125– 5.375	5.125– 5.375	5.125– 5.375	5.125– 5.375	5.125– 5.375
(b)North Texas	5.125– 5.625	5.125– 5.625	5.125– 5.625	5.125– 5.625	5.125– 5.625
West Texas	5.375– 5.75	5.25 – 5.375	5.25 – 5.375	5.375	5.375
Mid-Western (Group 3 basis)	4.875– 5.25	4.875– 5.25	4.875– 5.25	5.00 – 5.25	5.00 – 5.25
70-72 octane:					
Oklahoma	5.375– 5.625	5.375– 5.625	5.375– 5.625	5.375– 5.625	5.375– 5.625
(b)North Texas	5.375– 5.75	5.375– 5.75	5.375– 5.75	5.50 – 6.00	5.50 – 6.00
West Texas	5.625– 6.125	5.50 – 5.625	5.50 – 5.625	5.625	5.625
Mid-Western (Group 3 basis)	5.125– 5.375	5.125– 5.375	5.125– 5.375	5.125– 5.50	5.125– 5.50
Motor Gasoline, 60-64 oct.					
New York harbor	(a)6.50	(a)6.50	(a)6.50	(a)6.50	(a)6.50
Philadelphia district	(a)6.50	(a)6.50	(a)6.50	(a)6.50	(a)6.50
Baltimore district	(a)6.50	(a)6.50	(a)6.50	(a)6.50	(a)6.50
Motor Gasoline, 65 oct. & above:					
New York harbor	(a)6.75	(a)6.75	(a)6.75	(a)6.75	(a)6.75
Philadelphia district	(a)6.75	(a)6.75	(a)6.75	(a)6.75	(a)6.75
Baltimore district	(a)6.75	(a)6.75	(a)6.75	(a)6.75	(a)6.75
U. S. Motor, 58-62°:					
Bradford-Warren (Western Penna.)	5.375– 5.50	5.375– 5.50	5.375– 5.50	5.375– 5.50	5.375– 5.50
Other districts (Western Penna)	5.25 – 5.375	5.25 – 5.375	5.25	5.25	5.25
Motor Gasoline, Min. 65 oct.:					
Bradford-Warren (Western Penna.)	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00	6.50
Other districts (W stern Penna.)	6.50 – 6.625	6.50 – 6.625	6.50 – 6.625	6.50 – 6.625	6.50 – 6.625

(a) Nominal.
(b) For shipment to Texas and New Mexico destinations; Group 3 prices are quoted on northern shipment.

TANK WAGON MARKETS

Tank car, tank wagon, dealer, and service station prices for gasoline **do not include taxes;** *they do, however, include inspection fees as shown in general footnote. Gasoline taxes, shown in separate column, include 1c federal, and state taxes; also city and county taxes as indicated in footnotes. Kerosine tank wagon prices also do not include taxes; kerosine taxes, where levied, are indicated in footnotes. Discounts to various classes of buyers also are shown in footnotes. These prices in effect June 27, 1938, as posted by principal marketing companies at their headquarters offices, but subject to later correction.*

S. O. New Jersey

Essolene
(Regular Grade)

	Consumer Tank Car	Dealer T.W.	Gasoline Taxes	Kerosine T.W.
*Atlantic City, N. J.	7.4	9.4	4	8
*Newark, N. J.	7.4	9.4	4	8
Annapolis, Md.	8.35	9.85	5	9.5
Baltimore, Md.	7.75	9.25	5	9
Cumberland, Md.	9.15	11.65	5	10
Washington, D. C.	8	9.5	3	9.5
Danville, Va.	8.45	10.95	6	12.9
Norfolk, Va.	7.25	9.75	6	11.5
Petersburg, Va.	7.55	10.05	6	11.7
Richmond, Va.	7.55	10.05	6	11.7
Roanoke, Va.	8.75	11.25	6	12.9
Charleston, W. Va.	8.55	11.05	6	12.6
Parkersburg, W. Va.	7.85	9.35	6	11.2
Wheeling, W. Va.	8.85	10.25	6	12.2
Charlotte, N. C.	9.15	11.65	7	12.1
Hickory, N. C.	9.65	12.15	7	12.5
Mt. Airy, N. C.	9.45	11.95	7	12.3
Raleigh, N. C.	8.75	11.25	7	11.6
Salisbury, N. C.	9.25	11.75	7	12.2
Charleston, S. C.	7.75	10.25	7	10.6
Columbia, S. C.	8.75	11.25	7	11.6
Spartanburg, S. C.	9.45	11.95	7	12.4

Discount to undivided dealers: Dealer t.w. price less 0.5c per gal.

*Effective June 21, 1938, S. O. New Jersey posted a minimum retail resale price of 11.9c at these two points.

Note: While the above posted prices continue in New Jersey, dealers will pay a net price of 8.9c per gal. for Essolene. Dealers having pumps marked only Esso, Essolene and "Standard" White gasoline will pay 8.4c per gal. for Essolene.

Price basis to commercial consumers: To contract accounts, purchasing at least one full compartment at a time by hose connection: Effective March 12, 1937, in New Jersey, and March 8 in Maryland, District of Columbia, and in Arlington and Fairfax Counties in Virginia, on yearly purchases: from 2,500 to 100,000 gals., consumer t.w. price at time and place of delivery; 100,000 gals. per year consumer tank car price, plus 0.5c per gal. Generally consumer t.w. price in foregoing states is equivalent of dealer t.w. price, less 0.5c per gal.

Effective May 15, 1937, on Essolene and Esso (by tank wagon) in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax Counties, which see above), commercial consumers taking deliveries of 50 gals. (West Va. 100 gals.) or more at one time will be billed at the posted consumer t.w. price. Deliveries less than 50 gals. (West Va. 100 gals.) will be billed at 4c per gal. over posted consumer t.w. price. Generally, posted consumer t.w. price will be equivalent to the dealer price less 0.5c per gal.

Kerosine Discount: 1c off t.w. price for 25 gals., or more, under contract thru territory (Baltimore City contract not necessary) except no discount in state of New Jersey

Socony-Vacuum Oil Co., Inc.

(S. O. New York Division)

Socony Mobilgas
(Regular Grade)

	Consumer Tank Car	"Split" Dealer T.W.	Gasoline Taxes	Kerosine T.W.
Metropolitan N. Y. City: Boroughs of Manhattan, Bronx and Brooklyn (Kings and Queens)	7.5	9.5	*5	8
Borough of Richmond (Staten Is.)	7.5	9.5	*5	8
Albany, N. Y.	7.5	9.5	5	8.5
Binghamton, N. Y.	8.7	10.3	5	9
Buffalo, N. Y.	8	9	5	8
Jamestown, N. Y.	7.8	10.3	5	8.25
Plattsburg, N. Y.	7.9	9.9	5	9.5
Rochester, N. Y.	8.2	10	5	8.5
Syracuse, N. Y.	8.1	9.5	5	9
Danbury, Conn.	7.8	9.8	4	9
Hartford, Conn.	7.6	9.6	4	7
New Haven, Conn.	7.5	9.5	4	7
Bangor, Me.	8.5	10.3	5	9
Portland, Me.	8.2	10	5	8.75
Boston, Mass.	8	9	4	8
Concord, N. H.	8.8	10.5	5	9
Lancaster, N. H.	9.7	12	5	10.25
Manchester, N. H.	8.6	10	5	8.5
Providence, R. I.	8	9	4	8
Burlington, Vt.	8.4	10.4	5	9.5
Rutland Vt.	8.6	10.7	5	9

*Plus 2% city sales tax computed at time of each sale.

Discount to undivided dealers: 0.5c less than "split" dealer t.w.

Price basis to commercial consumers: Effective about Nov. 15, 1936 in New York and New England for tank wagon delivery: monthly purchases of 25,000 gals. or over, pay consumer tank car price at point of delivery, plus 0.5c gal.; monthly purchases of 5,000 to 25,000 gals., pay undivided dealer tank wagon price at point of delivery; monthly purchases of less than 5,000 gals., pay divided dealer tank wagon price at point of delivery. Private consumers pay undivided dealer tank wagon price at point of delivery, plus 2c gal.

Atlantic Refining

Atlantic White Flash Gasoline
(Regular Grade)

	Commercial Tank Car	Dealer T.W.	S.S.	Gasoline Taxes	Kerosine T.W.
Philadelphia, Pa.	7.25	8.75	12	5	10
Pittsburgh	8	10	15	5	10.5
Allentown	7.75	9.25	**	5	10.5
Erie	8	9.5	**	5	10
Scranton	8	9.5	**	5	10.5
Altoona	8	10	**	5	10.5
Harrisburg	7.5	9	**	5	10.5
Williamsport	8	10	**	5	10.5
Dover, Del.	...	8.5	**	5	10.5
Wilmington	...	7.5	**	5	9.75
Boston, Mass.	...	9	**	4	8
Springfield, Mass.	...	9.5	**	4	8
Worcester, Mass.	...	9	**	4	8.5
Fall River, Mass.	...	9	**	4	8
Hartford, Conn.	...	9.6	**	4	7
New Haven, Conn.	...	9.5	**	4	7
Providence, R. I.	...	9	**	4	8
Atlantic City, N. J.	...	8.60	**	4	8
Camden, N. J.	...	8.60	**	4	8
Trenton, N. J.	...	8.60	**	4	8
Annapolis, Md.	...	9.85	**	5	9.5
Baltimore, Md.	...	9.25	**	5	9
Hagerstown, Md.	...	10.35	**	5	10
Richmond, Va.	...	10.05	**	6	11.7
Wilmington, N. C.	...	10.35	**	7	10.8
Brunswick, Ga.	...	10	**	7	*13
Jacksonville, Fla.	...	8.5	**	8	11

*Georgia has kerosine tax of 1c per gal., not included in above price.

**Atlantic Refining transferred stations to dealers; no prices available.

Discount to undivided dealers: Dealer t.w. less 0.5c per gal. except in Georgia and Florida, dealer t.w. and undivided dealer price is same.

Price basis to commercial consumers: consumers under contract, in Penna. and Delaware, effective Mar. 11, 1937, on yearly gasoline purchases taking full compartment hose deliveries, using 100,000 gals. or more per year, tank car price plus 0.5c per gal.; consumers taking less than 100,000 gals., undivided dealer price. Consumers under contract and not under contract, taking less than full compartment delivery, and consumers not under contract taking full compartment delivery, get divided dealer price. Consumers taking less than 25 gals., t.w. delivery, get 4c above undivided dealer price.

Discount on kerosine: Effective Oct. 29, 1936, in Pennsylvania and Delaware, 2c per gal. off t.w. price on t.w. deliveries of 25 gals. or more at one time.

S. O. Ohio

Sohio X-70 Gasoline
(Regular Grade)

	Consumer T.W.	†Divided Dlr.	Gasoline Taxes	Kerosine T.W.
Ohio State-wide	11.5	10.5	5	*12
Counties where prices are below statewide:				
Butler, Clark, Columbiana, Defiance, Greene, Montgomery, Pickaway and Preble	11	10	5	....
Hamilton	11	9.5	5	....
Franklin, Knox, and Paulding:	10.5	9.5	5	....

Renown Gasoline
(Third Grade)

Ohio State-wide	11	10	5	....
Counties where prices are below statewide:				
Hamilton	11	9.5	5	....
Clark, Columbiana, Defiance and Pickaway	10.5	9.5	5	....
Franklin, Knox, and Paulding:	10	9	5	....
Counties where prices are above statewide:				
Clermont, Darke, Miami and Warren:	11.5	10.5	5	....

S. O. Ohio Cont'd

Kerosine Prices

(Off Statewide Level)

Kerosine prices are off statewide level in the following counties:

Allen, Auglaize, Champaign, Columbiana, Darke, Geauga, Greene, Hardin, Logan, Mahoning, Mercer, Preble, Putnam, Shelby, Trumbull and Van Wert *11.5
Paulding *11
Ashtabula *10.5
Fayette, Madison, Pickaway, Portage and Summit *8.5

†This price also to authorized agents, exclusive of 0.5c rental. Discount to undivided dealers: 0.5c less than divided dealer t.w.

*Ohio has kerosine tax of 1c per gal., not included in above prices.

Commercial Tank Wagon Q.D.A. to contract accounts: Effective Oct. 20, 1937, thru Ohio (except in 30 counties), on monthly purchases, off posted consumer t.w. price: 0 to 999 gals., 0.5c; 1,000 to 19,999 gals., 1.5c; 20,000 gals. and over, 2.5c. The 30 counties where Q.D.A. differs from statewide are: Allen, Ashtabula, Auglaize, Butler, Champaign, Cuyahoga, Darke, Defiance, Erie, Fulton, Geauga, Hamilton, Hardin, Henry, Logan, Lorain, Lucas, Mahoning, Mercer, Ottawa, Paulding, Putnam, Sandusky, Scioto, Shelby, Trumbull, Van Wert, Washington, Williams and Wood.

Sales tax: Ohio's 3% sales tax, effective Jan. 27, 1935, is added "where assessable, to regular posted prices," S. O. Ohio says.

On kerosine, prices to resellers and commercial consumers are posted generally at 3c per gal. below consumer t.w. price in any quantity, when such prices are on statewide level.

S. O. Kentucky

Crown Gasoline
(Regular Grade)

	Consumer T.W.	Net Dlr.	Gasoline Taxes	Kerosine T.W.
Covington, Ky.	12	9	6	10.5
Lexington, Ky.	14	11	6	10.5
Louisville, Ky.	13	10	6	10
Paducah, Ky.	13.5	10.5	6	10
Jackson, Miss.	13	10	7	*10
Vicksburg, Miss.	13	10	7	*10
Birmingham, Ala.	13.5	10.5	*8	12
Mobile, Ala.	13	10	*9	11
Montgomery, Ala.	12.5	10.5	*9	*12
Atlanta, Ga.	13	10	7	*12
Augusta, Ga.	14.5	11.5	7	*11.5
Macon, Ga.	14.5	11.5	7	*12
Savannah, Ga.	13	10	7	*11
Jacksonville, Fla.	12.5	9.5	8	8
Miami, Fla.	13	10	8	12.5
Pensacola, Fla.	13.5	10.5	*9	12
Tampa, Fla.	12	9	8	10.5

Kyso Gasoline
(Third Grade)

Covington, Ky.	10.5	8	6	....
Lexington, Ky.	12.5	10	6	....
Louisville, Ky.	11.5	9	6	....
Paducah, Ky.	12	9.5	6	....
Jackson, Miss.	10.5	8	7	....
Vicksburg, Miss.	11.5	9	7	....
Birmingham, Ala.	11.5	9	*8	....
Mobile, Ala.	11	8.5	*9	....
Montgomery, Ala.	11.5	9	*9	....
Atlanta, Ga.	12	9.5	7	....
Augusta, Ga.	12	9.5	7	....
Macon, Ga.	12.5	10	7	....
Savannah, Ga.	9.5	7	7	....
Pensacola, Fla.	12	9.5	*9	....
Tampa, Fla.	11	8	8	....

Discounts to all tank wagon consumers: Effective Jan. 4, 1937, thru territory, on Crown gasoline, 3c per gal. below consumer t.w. price; on Kyso, 2.5c below, regardless of quantity purchased, per month.

**Taxes*: In the tax column is included these city and county gasoline taxes at the following points: Mobile, 2c city; Birmingham, 1c city; Montgomery 1c city and 1c county; Pensacola, 1c city. Georgia and Montgomery, Ala. have kerosine taxes of 1c per gal., and Mississippi 0.5c, not included in above prices.

Above prices include these inspection fees on both gasoline and kerosine, per gallon, figured on basis of 50 gallons per barrel.

Alabama, 1/40c on gasoline, 1/2c on kerosine; Arkansas, 1/5c per gal. in a single barrel. 1/20c per gal. in bulk; Florida, 1/8c; Illinois, 3/100c; Indiana, 1/5c per gal. in lots up to 25 bbls.; 2/25c per gal. in lots of 25 bbls. or more; Kansas, 1/50c, (3/50c can be charged to meet inspection department expenses); Louisiana, 1/32c; Minnesota, 1/25c; Missouri, 3/100c; Nebraska, 3/100c; Nevada, gasoline, 1/20c; North Carolina, 1/4c; North Dakota, 1/20c; Oklahoma, 2/25c per gal. in lots of more than 50 bbls., 1/5c in lots less than 50 bbls.; South Carolina, 1/8c; South Dakota, 1/10c; Tennessee, 2/5c; and Wisconsin, 1/25c.

Kerosine inspection fee only: Iowa, 3/50c; Michigan, 1/5c per ga.

TANK WAGON MARKETS

Tank car, tank wagon, dealer, and service station prices for gasoline do not include taxes; they do, however, include inspection fees as shown in general footnote. Gasoline taxes shown in separate column, include 1c federal, and state taxes; also city and county taxes as indicated in footnotes. Kerosine tank wagon prices also do not include taxes; kerosine taxes, where levied, are indicated in footnotes. Discounts to various classes of buyers also are shown in footnotes. These prices in effect June 27, 1938, as posted by principal marketing companies at their headquarters offices, but subject to later correction.

S. O. Indiana

Red Crown (*Regular Grade*)
Stanolind (*Third Grade*)

	Red Crown Cons. T.W.	Dealer Prices Red Crown	Stano-lind	Gaso-line Taxes	Kero-sine T.W.
Chicago, Ill.	11.6	9.6	6.4	4	10.5
Decatur, Ill.	11.6	10.1	8	4	10.5
Joliet, Ill.	11.6	10.1	8.4	4	10.5
Peoria, Ill.	11.6	10.1	9.6	4	10.5
Quincy, Ill.	11.4	9.9	8.8	4	10.3
Indianapolis, Ind.	12.3	10.8	8.9	5	*11.2
Evansville, Ind.	12.1	10.6	7.1	5	*11
South Bend, Ind.	12.6	11.1	9.2	5	*9.4
Detroit, Mich.	11.3	9.8	9.3	4	9
Grand Rapids, Mich.	10.8	9.8	9.8	4	9.7
Saginaw, Mich.	12.3	10.8	10.3	4	9.3
Green Bay, Wis.	12.4	10.9	10.2	5	10.3
Milwaukee, Wis.	11.8	10.3	9.5	5	10.7
La Crosse, Wis.	12	10.5	10	5	10.9
Minneapolis-St. Paul	12	10.5	10	5	10.9
Duluth, Minn.	12.4	10.9	10.4	5	11.3
Mankato, Minn.	12	10.5	10	5	10.9
Des Moines, Ia.	11.4	9.9	7.5	4	*8.8
Davenport, Ia.	11.6	10.1	9.6	4	*10.5
Mason City, Ia.	11.8	10.3	9.8	4	*10.7
St. Louis, Mo.	11.2	9.7	7.5	*4	8
Kansas City, Mo.	10.9	9.4	6.9	*4	8.5
St. Joseph, Mo.	10.9	9.4	8.9	*4	8.5
Fargo, N. D.	13.2	11.7	11.2	4	12.1
Minot, N. D.	14.5	13	12.5	4	13.4
Huron, S. D.	12.5	11	10.5	5	11.4
Wichita, Kans.	10.4	7.6	6.5	4	7.8

*Taxes: in the tax column is included these city and state gasoline taxes at following points: Kansas City, St. Joseph and St. Louis, 1c city tax. Indiana has 4c, and Iowa has 3c kerosine tax per gal., not included in above prices.

Discount to commercial consumers: Effective Jan. 1, 1935, thru territory, except Michigan effective Feb. 1, on purchases per month, discount off t.w. prices; all gasolines, 25 to 1,000 gals., at t.w. price; 1,000 gals., or more, 1.5c off t.w. on Ethyl and Red Crown, and 1c on Stanolind (latter effective June 9, 1937). Minimum delivery is 25 gals.

S. O. Nebraska

Standard Red Crown Gasoline
(*Regular Grade*)

	T.W.	Dealer	Gaso-line Taxes	Kero-sine T.W.
Omaha, Neb.	12	10.5	6	10.8
McCook	12.7	10.5	6	10.5
Norfolk	12.4	10.9	6	11.2
North Platte	12.8	11.3	6	11.6
Scottsbluff	13.5	12	6	12.3

Discounts to commercial consumers: for tank wagon deliveries covered only by Standard Commercial Consumer Contract, effective January 1, 1935.

S. O. Louisiana

Essolene
(*Regular Grade*)

	Consumer Tank Car	Dealer T.W.	Gaso-line Taxes	Kero-sine T.W.
Little Rock, Ark.	7.25	9.75	7.5	11.5
Alexandria, La.	7	9.5	8	*9.5
Baton Rouge, La.	6.5	9	8	*11
New Orleans, La.	6.5	9	*10	*10
Lake Charles, La.	7.5	10	8	*11.5
Shreveport, La.	6	8.5	8	*8.5
Lafayette, La.	7.5	10	8	*11.5
Bristol, Tenn.	9.75	11	8	14.5
Chattanooga, Tenn.	9	11.5	8	13.5
Knoxville, Tenn.	9.5	12	8	14
Memphis, Tenn.	7.5	10	8	12
Nashville, Tenn.	8.5	11	8	10.5

*New Orleans gasoline tax includes 7c state, 1c federal, and 2c parish tax. Louisiana has kerosine tax of 1c per gal.; in addition New Orleans has 1c parish tax, not included in above prices.

Price basis to dealers: Undivided dealers get dealer price, less 0.5c.

Price basis to commercial consumers: Effective May 15, 1937, thru territory; commercial consumers taking 50 gals. or more at one time will be billed at posted consumer t.w. price; those taking less than 50 gals. at one time will be billed at 4c per gal. over posted consumer t.w. price. Generally, the posted consumer t.w. price will be equivalent to the dealer price less 0.5c per gal.

Humble Oil & Refining Co.

Humble Motor Fuel
(*Regular Grade*)

	*T.W.	S.S.	Gaso-line Taxes	Kero-sine T.W.
Dallas, Tex.	9	13	5	8
Ft. Worth, Tex.	9	13	5	8
Houston, Tex.	9.5	13.5	5	8
San Antonio, Tex.	8.5	12.5	5	8

U. S. Motor Gasoline
(*Third Grade*)

Dallas, Tex.	7	10	5
Ft. Worth, Tex.	7.5	10	5
Houston, Tex.	8.5	11.5	5
San Antonio, Tex.	7.5	10.5	5

*Price is t.w. price to all classes of dealers and consumers.

Price basis to "open" dealers: discount off posted retail price: when posted retail price, including all taxes on Esso motor fuel is: 19.1c per gal. and above, discount is 3.5c; 19c to 18.1c, 3c, and 18c and below, 2.5c. Humble motor fuel, 17.1c and above, 3.5c; 17 to 16.1c, 3c; and 16c and below, 2.5c; U. S. motor fuel, 15.1c and above, 2.5c; 15 to 14.1c, 2c; and 14c and below, 1.5c.

Continental Oil

Conoco Bronze (*Regular Grade*)
Demand (*Third Grade*)

	—Dealer Prices— Conoco Bronze	Demand	Gaso-line Taxes	Kero-sine T.W.
Denver, Colo.	9	8	5	11.5
Grand Junc., Colo.	14	13	5	15
Pueblo, Colo.	11.5	10.5	5	10.5
Casper, Wyo.	12	11	5	11.5
Cheyenne, Wyo.	8	7	5	13
Billings, Mont.	13.5	12.5	6	13
Butte, Mont.	13.5	10.5	6	15.5
Great Falls, Mont.	13	12	6	15.5
Helena, Mont.	14	13	6	15.5
Salt Lake City, Utah	13	11.5	5	16
Boise, Ida.	15.5	14.5	6	18
Twin Falls, Ida.	15	14	6	18
Albuquerque, N. M.	11	10	†6.5	12
Roswell, N. M.	11	8.5	†6.5	10.5
Santa Fe, N. M.	12	9.5	*7	12
Muskogee, Okla.	9.5	6.5	5	7
Oklahoma City, Okla.	8.5	6.5	5	7
Tulsa, Okla.	9	6	5	6
Ft. Smith, Ark.	9.25	6.75	5	7.5
Little Rock, Ark.	9.25	7.625	7.5	8
Texarkana, Ark.	9	6	5	8.5

†Includes city tax of 0.5c.
*Includes 1c city tax.

S. O. California

Standard Gasoline
(*Regular Grade*)

	T.W	S.S.	Gaso-line Taxes	Kero-sine T.W.
San Francisco, Cal.	13.5	14.5	4	11.5
Los Angeles, Cal.	13	14	4	10
Fresno, Cal.	14.5	15.5	4	12.5
Phoenix, Ariz.	15.5	16.5	6	*12.5
Reno, Nev.	15.5	16.5	5	13.5
Portland, Ore.	14	15	6	13.5
Seattle, Wash.	14	15	6	13.5
Spokane, Wash.	17	18	6	16.5
Tacoma, Wash.	14	15	6	13.5
Flight Gasoline (*Third Grade*)				
San Francisco, Cal.	12	13	4	....
Los Angeles, Cal.	11.5	12.5	4	....
Fresno, Cal.	13	14	4	....
Reno, Nev.	14	15	5	....
Phoenix, Ariz.	14	15	6	....
Portland, Ore.	12.5	13.5	6	....
Seattle, Wash.	12.5	13.5	6	....
Spokane, Wash.	15.5	16.5	6	....
Tacoma, Wash.	12.5	13.5	6	....

*Arizona has kerosine tax of 5c per gal., not included in above prices.

Discount to dealers: on gasoline, off t.w. price on Standard Ethyl and Standard Gasoline, to 100% dealers, 3c; to split dealers, 2c; on Flight gasoline, both 100% and split dealers, 2c.

On Stanavo Aviation Gasoline, to all classes of dealers, 3c off t.w.

To commercial consumers: off tank wagon price: on single deliveries of 40 gallons and over. Stanavo Aviation, Standard Ethyl and Standard Gasolines, 3c. Flight Gasoline, 2c per gallon. Tank wagon delivery, less than 40 gals., 1c per gal. above posted t.w. price. Discounts on kerosine: in tank cars, 3c off tank truck price; plant deliveries to jobbers, 2.5c below tank truck price.

Canada

PRICES OF IMPERIAL OIL LTD.

Per Imperial Gallon, which is 1.2 U. S. Gallons

3-Star Imperial Gasoline
(*Regular Grade*)

	T.W.	Gasoline Taxes	Kero-sine T.W.
Hamilton, Ont.	16	6	17
Toronto, Ont.	16	6	17
Brandon, Man.	21.1	7	22.3
Winnipeg, Man.	20.5	7	20.7
Regina, Sask.	19	7	22
Saskatoon, Sask.	21.3	7	24.8
Edmonton, Alta.	19.5	7	21.5
Calgary, Alta.	16.5	7	19
Vancouver, B. C.	16	7	23
Montreal, Que.	15	6	17.5
St. John, N. B.	14.5	10	18.5
Halifax, N. S.	14.5	10	18.5

Discounts to undivided dealers, 1c off t.w. price, except Maritime Provinces where undivided dealers pay t.w. price. Divided dealers pay t.w. price, thru territory.

Aviation Gasoline

Following are tank car, tank wagon or dealer prices, as indicated, of aviation gasoline in several marketing territories.

S. O. OHIO
Thru Ohio
Stanavo Ethyl Aviation

	Consumer T.W.	Gasoline Taxes
73 octane	15.5	5
80 octane	16.5	5
87 octane	17.5	5

Discounts: For delivery on contract to hangar operators and resellers: 2c below consumer posted t.w. price, shown above.

S. O. INDIANA
Stanavo Ethyl Aviation Gasoline, 73 Octane Number

Chicago, Ill.	14.9	4
Detroit, Mich.	16.5	4
Milwaukee, Wis.	15.1	5
Minneapolis, Minn.	15.3	5
St. Louis, Mo.	14.5	3
Kansas City, Mo.	14.2	*4
Fargo, N. D.	16.5	4
Huron, S. D.	15.8	5

*Includes 1c city tax.

HUMBLE OIL & REFINING CO.
Stanavo Aviation Gasoline

	Tank Car
Baytown, Tex.	8.5

CONTINENTAL OIL CO.
Conoco Special Gasoline

	Dealer	Gasoline Taxes
Denver, Colo.	14.5	5
Cheyenne, Wyo.	15	5
Helena, Mont.	17	6
Salt Lake City, Utah	17.5	5
Albuquerque, N. M.	14	*6.5

*Includes city tax of 0.5c.

S. O. CALIFORNIA
Stanavo Aviation Gasoline

	T.W.	
Phoenix, Ariz.	17.5	6
Los Angeles, Cal.	15	4
San Francisco, Cal.	15.5	4
Reno, Nev.	17.5	5
Portland, Ore.	16	6
Seattle, Wash.	16	6
Spokane, Wash.	19	6

Note: For discounts, etc., see note under Standard and Flight gasoline above.

Naphtha (In Tank Wagon)

S. O. NEW JERSEY
Posted Tank Wagon Prices

	Mineral Spirits	V.M.&P.
Newark, N. J.	11.5	15.5
Baltimore, Md.	15.5	....
Washington, D. C.	15	....

Discounts: Buyers taking following quantities, at one time, get these discounts: Newark, 2c per gal. on 200 gals. or more; less than 200 gals., 0.5c higher price. Baltimore 2c off on 25 to 100 gals. and 3c on over 100 gals. Washington, 2c off to contract buyers.

SOCONY-VACUUM OIL CO.

Buffalo, N. Y.	13	14
New York City	9.5	11.5
Rochester, N. Y.	13	15
Syracuse, N. Y.	14	15
Boston, Mass.	13.5	14
Bridgeport, Conn.	12.5	14
Hartford, Conn.	12	13.5
Providence, R. I.	13.5	14.5

ATLANTIC REFINING CO.

Philadelphia, Pa.	11.5	12.5
Lancaster, Pa.	13	14
Pittsburgh, Pa.	12.5	14.5

Note: Prices for Mineral Spirits also apply to Stoddard Solvent; and prices for V.M.&P. Naphtha apply also to Light Cleaners Naphtha.

TANK WAGON MARKETS

Tank car, tank wagon, dealer, and service station prices for gasoline **do not include taxes;** *they do, however, include inspection fees as shown in general footnote. Gasoline taxes, shown in separate column, include 1c federal, and state taxes; also city and county taxes as indicated in footnotes. Kerosine tank wagon prices also do not include taxes; kerosine taxes, where levied, are indicated in footnotes. Discounts to various classes of buyers also are shown in footnotes. These prices in effect June 27, 1938, as posted by principal marketing companies at their headquarters offices, but subject to later correction.*

S. O. OHIO

	S.R. Solvent	V.M.&P. Naphtha
Thru Ohio	12.5	13.5

Note: V.M.&P. Naphtha prices also apply on Dry Cleaners naphtha and special Varnolene; Varnolene and Sohio Solvent 0.5c below these prices. Discounts to contract consumers, off t.w. price: 300 to 999 gals., 0.5c; 1,000 to 2,499 gals., 0.75c; 2,500 to 4,999 gals., 1c; 5,000 or more gals., 1.5c.

S. O. INDIANA

(Prices include state and federal taxes)

	Oleum Spirits	V.M.&P. Naphtha	Stanisol
Chicago, Ill	16.2	16.5	15.9
Detroit, Mich	19.2	18.7	19.7
Kansas City, Mo	13.9	14.9	14.4
St. Louis, Mo	14.2	15.2	13.9
Milwaukee, Wis	18.8	19.8	19.3
Minneapolis, Minn	19	20	17.7

Note: All prices, with exception of Missouri points, include state tax. Prices shown are base prices, before discounts.

Naphtha (In Tank Cars)

In Tank Cars (F. o. b. refinery or seaboard terminal except Ohio, delivered price.)

	V.M.&P. Naphtha	Solvent
Baltimore	10.5	9.5
New York Harbor	10	9
Philadelphia district	10.5	9
Boston	10.5	9.5
Providence	10.5	9.5
Ohio points, delivered	8.875	*8

*This is on rubber solvent.

Note: In Ohio, prices on D.C. naphtha and special Varnolene are same as V.M.&P.; on Varnolene and Sohio Solvent, prices are 0.5c less than on V.M.&P

Latest Changes

From June 21 to June 27 inclusive. Dates and amounts of changes shown. See table for full current prices.

S. O. Indiana—Stanolind, Standard Tractor Fuel and Kerosine:

To restore to normal all reduced t. w. consumer prices, thru territory, except Michigan and Kansas, June 29. This advance not reflected in prices in this issue.

S. O. Nebraska—All Motor Gasolines:

Prices subnormal 1.5c or more, up 1.5c, on t. w., dealer, and s. s., June 23. Omaha and Norfolk unchanged; McCook t. w. up 1.2c, dealer 1.5c; North Platte dealer up 0.4c, t. w. unchanged; Scottsbluff dealer up 1.5c, t. w. unchanged. All foregoing on Standard Red Crown.

Kerosine and Tractor Fuel:

T. w., dealer, and s. s. prices subnormal 1c or more, up 1c, June 23. Kerosine unchanged were Omaha and Scottsbluff; up 1c, McCook; up 0.9c, Norfolk; up 0.6c, North Platte.

Imperial Oil, Canada — 3 Star Imperial Gasoline:

T. w. cut 1c, Regina; 1.5c, Saskatoon, and 0.5c, Galgary, June 21.

Corrections

Notation of amount of change and dates not previously shown in table. Table in this issue is corrected to show these changes.

S. O. Kentucky—Crown and Kyso Gasolines:

Consumer t. w. and net dealer prices advanced generally 0.5c to 1c, thru territory, June 20. The 0.5c advance was mostly at normal points; subnormal points were up as high as 1c. Crown gasoline unchanged at Covington, and Louisville. Up 1c were Mobile, Atlanta, Jacksonville and Tampa. Other points up 0.5c. Kyso changes were: unchanged, Covington; Up 1c, Lexington, Montgomery, Atlanta, Augusta, Pensacola and Tampa; up 1.5c, Mobile; cut 0.5c, Jackson; other points up 0.5c.

Crown local changes:
Atlanta cut 1c, June 10.
Jacksonville cut 1c, June 6.
Tampa cut 0.5c, June 4.

Kyso local changes:
Covington cut 0.5c, June 15.
Augusta cut 1c, June 1.
Savannah cut 1.5c, May 27.
Tampa prices established at 10c consumer t. w., 7c dealer, June 4.

Kerosine:
2c per gal. discount eliminated in Mississippi, Alabama, Georgia and Florida, and prices reduced correspondingly to a net basis, June 1.
Cut 0.5c, thru Kentucky, June 17, except Paducah unchanged.
Cut 2c, thru Mississippi, June 15.
Cut 1.5c, Augusta and Macon, June 15.
Jacksonville cut 1c, June 14.

Coastal

(Continued from page 56)

C bunker oil, ships' bunkers, at New Orleans. The majority of other suppliers reported meeting the cut and also extended it to other ports along the Gulf Coast.

Reports were heard more frequently that bunker oil in cargo lots was available at lower prices, but actual quotations or sales could not be confirmed.

The general market situation on light products both for export and domestic shipment was reported unchanged. Gasoline prices remained firm, traders said, and kerosine slow.

California

N. P. N. News Bureau

LOS ANGELES, June 25.—Pacific Coast petroleum markets were quiet the past week, with no important changes in quotations. Seasonal increases in demand for gasoline gave a firmer tone to wholesale and retail prices of that product. A number of independent refiners in the Los Angeles Basin area, who have been posting a net rack price of 7 cents a gallon for their competitive brands, advanced their posted prices by 0.5 cent a gallon, bringing them to a level with a majority of independents. Wilshire Oil Co., however, continued to post a net price of 7 cents a gallon at the rack for its third grade brand, and 7.25 cents, net, delivered. Considerable quantities of third-grade gasoline, with a fairly high octane rating, were reported brought into the Basin from a plant in San Joaquin Valley, delivered in full truck or trailer lots at 7.75 per gallon, ex tax.

Demand for fuel oil was slow and prices were irregular. In the Basin a high-sulfur fuel oil was available at $0.60 per barrel, but regular pipe-line takings were quoted at $0.65 a barrel. In this area, diesel oil was generally quoted at independent plants at 2.50 cents a gallon and kerosine-distillate stock at fractionally less than 3 cents a gallon. Because of limited supplies, prices of burning oils were firm in the Valley at somewhat higher levels. At independent plants, the prevailing price for diesel ranged from 3.25 to 3.50 cents a gallon, while k. d. stock was 3.75 cents a gallon.

Wax

NEW YORK, June 27.—Coastal wax markets continued fairly steady in the week ended June 25, according to reports of the New York trade. Prices in both the New Orleans and New York districts generally were reported unchanged, and while demand, both export and domestic, was only moderately active, there were no indications of price shading, traders said.

Inventories of crude scale in both the Mid-Continent and western Pennsylvania were said to be in good shape with little, if any, surplus to be moved to the coastal markets for export, traders said. Some sellers said they were asking slightly higher prices for 124-126 A.M.P. white scale but this grade continued to be available in most quarters at 2.15 to 2.25 cents a pound.

Pennsylvania Refinery Lubricating Oil Inventory

(Issued by National Petroleum Association)

	June 9 Gallons	June 16 Gallons
1. **Raw Long Residuum** (Including all raw long residuum below, and not salable, as 600 fire)	2,260,818	1,887,433
2. **600 Steam Refined** (Includes all steam refined stock commonly sold or used as 600 and as raw material for bright stocks)	7,042,786	6,603,259
3. **Other Steam Refined** (Not included in 1 and 2 above)	6,861,602	6,554,004
4. **Finished Dewaxed Long Res.**	3,259,228	3,209,210
5. **Bright Stock** (Does not include any material reported in 4, above)	23,224,249	23,204,893
6. **Viscous Neutral,** below 180 vis. but not below 142 vis. @ 100	9,764,606	9,150,151
7. **Viscous Neutral,** 180 vis. @ 100 and above	10,501,008	10,354,364

SEABOARD MARKETS, EXPORT AND COASTWISE

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days). In cargo markets, spot shipment is 90 days. Prices in cents per gallon, except heavy fuel oil in dollars per barrel, in tank car lots, f.o.b. refineries or seaboard terminals in districts designated, unless otherwise noted. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude. Unless otherwise noted, gasoline octane ratings are determined by C.F.R. Motor method, A.S.T.M. D-357-33T; and lubricating oil specifications determined according to A.S.T.M. methods, unless otherwise noted.

Eastern Domestic

(Inter-refinery and export prices not included.)

MOTOR GASOLINE

Prices Effective	June 27	
District:	(a) 60-64 Oct.	(a) 65 Oct. & Above
N. Y. harbor	6.50	6.75
(b) N. Y. harbor	6.25	6.50
Philadelphia	6.50	6.75
Baltimore	6.50	6.75
Norfolk	6.75 – 7.00	7.00 – 7.25
Wilmington, N. C.	6.75 – 7.00	7.00 – 7.25
Charleston, S. C.	6.75 – 7.00	7.00 – 7.25
Savannah	7.00 – 7.25	7.25 – 7.50
Jacksonville	7.00 – 7.25	7.25 – 7.50
Portland	7.00 – 7.50	7.25 – 7.75
Boston	6.50 – 7.00	6.75 – 7.00
Providence	6.50 – 7.25	6.75 – 7.50

WATER WHITE KEROSINE

District:			
N. Y. harbor	4.625–4.75	Charleston	5.00–5.25
(b) N. Y. harbor	4.50 –4.625	Savannah	5.25–5.50
Philadelphia	5.00 –5.25	Jacksonville	5.25–5.50
Baltimore	5.00 –5.25	Portland	5.60
Norfolk	5.00 –5.25	Boston	5.00
Wilmington, N.C.	5.00 –5.25	Providence	5.00

(c) FUEL OILS

	N. Y. harb.	N. Y. harb. barges
No. 1	4.625– 4.75	4.50 – 4.625
Nos. 2-3	4.00	3.75 – 3.875
No. 4	3.75 – 4.00	3.75 – 3.875
No. 5	$1.25	
No. 6	$0.95	

	Phila. dist.	Balt. dist.
No. 1	5.00 – 5.25	5.00 – 5.25
Nos. 2-3	4.25	4.25
No. 4	4.00	4.00 – 4.25
No. 5	$1.25	$1.25
No. 6	$0.95	$0.95

	Bost. dist.	Prov. dist.
No. 1	5.00	5.00
Nos. 2-3	4.00	4.00
No. 4	3.75 – 4.00	3.75 – 4.00
No. 5	$1.35	$1.30
No. 6	$0.95	$0.95

District:	(d) Bunker C Fuel	(d) Diesel Oil
N. Y. harbor	(f) $0.95	(g) $1.65
Philadelphia	(f) $0.95	(g) $1.75
Baltimore	(f) $0.95	(g) $1.75
Norfolk	(e) $0.95	$1.75
Charleston	$0.90	$1.75
Savannah	(e) $0.90	$1.785
Jacksonville	(e) $0.90	$1.785
Tampa	(e) $0.85	$1.785
Portland	$1.05	$1.75
Boston	(f) $0.95	(g) $1.65
Providence	$0.95	$1.65

	Gas Oil 28-34 Gravity	Diesel Oil Shore Plants
N. Y. harbor	4.00	4.00
Philadelphia dist.	4.25	....
Baltimore dist.	4.25	....
Norfolk dist.	4.25	....
Savannah dist.	....	4.25
Jacksonville dist.	....	4.25

Pacific Export

(i) (Quotations are at seaboard, Los Angeles, in cargo lots, cents per gal., except where otherwise noted.)

Prices Effective	June 27	June 20
U. S. Motor, under 65 oct.	4.75 – 4.875	4.75 – 4.875
400 e.p. blend, under 65 oct.	4.875– 5.00	4.875– 5.00
400 e.p. blend 65 oct. & above	5.00 – 5.25	5.00 – 5.25
(h) 38-40 w.w. kerosine	4.25 – 4.75	4.25 – 4.75
41-43 w.w. kerosine	4.75 – 5.00	4.75 – 5.00
44 w.w. kerosine	5.25 – 5.50	5.25 – 5.50
In Cargo lots, per bbl.		
Dieselfuel, 24° & above	$1.10 –$1.15	$1.10 –$1.15
Diesel fuel, under 24°	$1.00 –$1.10	$1.00 –$1.10
(h) 30-34 diesel (gas oil)	$1.15 –$1.30	$1.15 –$1.30
(k) Grade C fuel oil	$0.60 –$0.70	$0.60 –$0.70

Prices Effective	June 27	June 20
In Ships' Bunkers, or deep tank lots, per bbl.:		
(j) Diesel fuel oil	$1.525–$1.55	$1.525–$1.55
(k) Grade C fuel oil	$0.875–$0.90	$0.875–$0.90
Cased Goods: (Per case)		
U. S. Motor	$1.40 –$1.525	$1.40 –$1.525
400 e.p. blend, under 65 octane	$1.50 –$1.60	$1.50 –$1.60
400 e.p. blend, 65 oct. & above	$1.60 –$1.70	$1.60 –$1.70
(h) 40-43 w.w. kerosine	$1.30 –$1.40	$1.30 –$1.40
Kerosine, p.w.	$1.25 –$1.35	$1.25 –$1.35

New York Export

(Cents per gal. in bbls. F.a.s. New York)

CYLINDER OILS (Pennsylvania Products)

Bright stock:		
Light, 25 p.t.	19.50 –20.00	19.50 –20.00
Neutral oil:		
200 3 color, 25 p.t.	19.50 –20.00	19.50 –20.00
150 3 color, 25 p.t.	18.50 –19.00	18.50 –19.00
600 s.r., unfiltered	16.00 –16.50	16.00 –16.50
650 s.r., unfiltered	18.00 –18.50	18.00 –18.50
600 fl., s.r.	18.50 –19.00	18.50 –19.00
630 fl., s.r.	21.50 –22.00	21.50 –22.00

Wax, Domestic *and* Export

(A.S.T.M. Tests. Melting points, however, are A.M.P., 3° higher than E.M.P. Export prices, f.a.s., carloads. Domestic prices, f.o.b. refineries in New Orleans & New York districts in bags, carloads, with 0.2c discount allowed for shipment in bulk, except where noted below. Scale solid; fully refined, slabs in bags)

Prices Effective	June 27	
	New York	
	Domestic	Export
124-6 Y.C. scale	2.10 – 2.25	2.10 – 2.25
122-4 W.C. scale	2.15 – 2.25	2.15 – 2.25
124-6 W.C. scale	2.15 – 2.25	2.15 – 2.25
123-5 Fully rfd.	4.30	3.50
125-7 Fully rfd.	4.35	3.50 – 3.625
128-30 Fully rfd.	4.45	3.75 – 3.875
130-2 Fully rfd.	4.55	4.125
133-5 Fully rfd.	(l) 5.00	4.50 – 4.625
135-7 Fully rfd.	(l) 5.25	5.00 – 5.125
	New Orleans	
	Domestic	Export
124-6 Y.C. scale	2.10 – 2.25	2.10 – 2.25
122-4 W.C. scale	2.15 – 2.25	2.15 – 2.25
124-6 W.C. scale	2.15 – 2.25	2.15 – 2.25
123-5 Fully rfd.	4.30	3.50
125-7 Fully rfd.	4.35	3.50 – 3.625
128-30 Fully rfd.	4.45	3.75 – 3.875
130-2 Fully rfd.	4.55	4.125
133-5 Fully rfd.	(l) 5.00	4.50 – 4.625

Gulf Coast

(F.o.b. ship, Gulf oil terminals; minimum 20,000 bbls.; representing traders' opinions)

Prices Effective	June 27	June 20
For Domestic shipment:		
MOTOR GASOLINE		
59 oct. & below	5.00 – 5.125	5.00 – 5.125
60-64 oct.	5.125– 5.25	5.125– 5.25
65-67 octane	5.375– 5.50	5.375– 5.50
68-70 octane	5.75 – 6.00	5.75 – 6.00
FUEL OILS		
No. 1	3.875– 4.00	3.875– 4.00
No. 2	3.375– 3.50	(a) 3.25
KEROSINE		
41-43 w.w.	3.875– 4.00	3.875– 4.00
For Export Shipment:		
GASOLINE		
U. S. Motor	(a) 4.75	(a) 4.75
60-62, 400 e.p.	(a) 4.75	(a) 4.75
61-63, 390 e.p.	(a) 4.75 –4.875	(a) 4.75–4.875
64-66, 375 e.p.	(a) 4.875– 5.00	(a) 4.875–5.00
KEROSINE		
44 w.w.	4.25 – 4.50	4.25 –4.50
41-43 w.w.	3.875– 4.00	3.875– 4.00
41-43 p.w.	3.875– 4.00	3.875– 4.00

Prices Effective	June 27	June 20
GAS AND BUNKER OILS		
For Export Shipment		
Gas Oil (m):		
Below 43 diesel index	3.375	(a) 3.25
43-47 diesel index	3.375– 3.50	(a) 3.25 –3.50
48-52 diesel index	3.50	(a) 3.50
53-57 diesel index	3.625	(a) 3.625
For Domestic and/or Export Shipment		
Diesel Oil Ship's bkrs.	(o) $1.55–$1.75	(o) $1.55–$1.75
Grade C bunker oil for ship's bunkers	(o) $0.75	(o) $0.75–$0.80
Grade C bunker oil, in cargoes	$0.675–$0.70	$0.675–$0.70

MID-CONTINENT LUBRICATING OILS

(Cents per gal. at Gulf; in bbls., f.a.s.; in bulk, f.o.b. terminals)

	June 27	
190-200 vis. D. 210 brt. stock	(p) Barrels 22.50 –24.50	Bulk 17.60 –17.75
150-160 vis. D 210 brt. stock:		
0-10 p.p.	19.00 –20.50	13.00 –14.75
10-25 p.p.	18.50 –20.00	12.50 –14.25
150-160 vis. E 210 brt. stock	18.50 –20.00	13.00 –14.50
120 vis. D 210 brt. stock	18.50 –20.00	13.00 –14.50

	June 27	June 20
180 vis. No. 3 color neutral:	Bulk	Bulk
0-10 p.p.	10.00 –10.50	10.00 –10.50
15-30 p.p.	9.50 –10.00	9.50 –10.00
200 vis. No. 3 color neutral:		
0-10 p.p.	10.00 –10.50	10.00 –10.50
15-30 p.p.	9.50 –10.00	9.50 –10.00
600 s.r. olive green	9.00 –11.25	9.00 –11.25
600 s.r. dark green	7.00 – 9.25	7.00 – 9.25

SOUTH TEXAS LUBRICATING OILS

(Vis. at 100° cold test 0, bulk export shipment, f.o.b. terminals.)

Unfiltered Pale Oils:

Vis.	Color		
100	No. 3	4.75 – 5.00	4.75 – 5.00
200	No. 3	6.25 – 6.75	6.25 – 6.75
300	No. 3	6.75 – 7.25	6.75 – 7.25
500	No. 3½	7.75 – 8.25	7.75 – 8.25
750	No. 4	8.25 – 8.75	8.25 – 8.75
1200	No. 4	8.75 – 9.25	8.75 – 9.25
2000	No. 4	9.00 – 9.50	9.00 – 9.50

Red Oils:

Vis.	Color		
100	No. 5-6	4.75 – 5.00	4.75 – 5.00
200	No. 5-6	6.25 – 6.75	6.25 – 6.75
300	No. 5-6	6.75 – 7.25	6.75 – 7.25
500	No. 5-6	7.75 – 8.25	7.75 – 8.25
750	No. 5-6	8.25 – 8.75	8.25 – 8.75
1200	No. 5-6	8.75 – 9.25	8.75 – 9.25
2000	No. 5-6	9.00 – 9.50	9.00 – 9.50

Note: Red oil prices cover oils with green cast; prices for blue cast red oils are slightly lower in some cases.

Tanker Rates

(Approximate freight rates to Continental ports, shillings per ton of 2240 lbs., British sterling; U.S. ports cents per bbl.)

Rates Effective June 27

	Crude & /or Fuel		Refined Oil & /or Spirits	
	Last Paid	Owners Ask	Last Paid	Owners Ask
Gulf-U.K./Cont. (q)	11/-	12/-12/6	12/	12/-12/6
Aruba-U.K./Cont. (q)	10/	10/-10/6	10/6	10/-10/6
Gulf-N. Atlantic (r) (not E. of N.Y.):				
Hvy. Crude & fuel, (10 to 19.9 gravity)	15.5c	15.5c	....	....
Light Crude, (30 Grav. or Lighter)	14c	15c	....	....
Gasoline	....	....	14c	15c
Kerosine	....	....	14c	15c
Light Fuel	....	....	14c	15c

(a) Prices nominal. (b) In barge lots. (c) Fuel oils meet specifications of U. S. Commercial Standards CS12-35. (d) In ships' bunkers. (e) For barging, add 5c per bbl. (f) For barging, add 5 to 6c per bbl. (g) For barging, add 6.5 to 7.5c per bbl. (h) 150 fire point. (i) For San Francisco cargo prices, add 5c per bbl. to cargo prices shown above. (j) Pacific Specification 200. (k) Pacific Specification 400. (l) Shipment either in bags or in bulk. (m) Less than ½ of 1% sulfur. (n) No prices reported. (o) Barging 5c per bbl. additional at some Gulf ports. (p) Second-hand barrels. (q) Continental ports in range between Bordeaux and Hamburg, both inclusive. (r) Venezuela loading, same rate; Tampico, 2c to 3c per bbl. additional.

CRUDE OIL MARKETS

Prices in $ per bbl. of 42 U. S. gals. at the well. A. P. I gravity. Prices are effective as of 7 a. m. of dates as given

EASTERN FIELDS

Posted by Joseph Seep Purchasing Agency

(Effective June 13, 1938, except Corning June 16, 1938

Penna. Grade Oil in Southwest Penna. Pipe Lines.....$1.46
Penna. Grade Oil in Eureka Pipe Lines (West Virginia).....$1.40
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.).....$1.30
Corning Oil in Buckeye Pipe Lines (Ohio)...$1.17

Posted by Other Companies

Tide Water Associated Oil Co.
Bradford-Allegany district (Penna. and N. Y.) (Effective June 13, 1938).....$1.80
*The Pennzoil Co.: (Effective June 13, 1938)
Penna. Grade Oil in National Transit Lines*$1.73
Ashland Oil & Transportation Co.:
Somerset Oil in Ashland Lines (Ky.):
(Effective Jan. 28, 1937)
Big Sandy River.....$1.42
Kentucky River.....$1.50
*The Pennzoil Co. posts $1.73 in Cochran, Franklin, Hamilton and Doolittle, Pa. fields; prices in other lower districts range down to $1.68 per bbl. at well.

MICHIGAN

Posted by Pure Oil Co.

Midland, Midland County (Jan. 5, 1938)....$1.12

Posted by Simrall Pipe Line Corp.

(Effective Dec. 29, 1937)

West Branch, Arenac, and equal grades.....$0.80

(Effective Jan. 8, 1938)

Beaverton, Crystal, Greendale, Porter and equal grades.....$1.12
Buckeye, Bentley, Billings, Tobacco and equal grades.....$1 095

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

(Effective Jan. 28, 1937)

Illinois, Princeton.....$1.35
(Effective June 22, 1938)
Owensboro (Western Ky.).....$1.30

(Effective Nov. 20, 1937)

Lima, O.....$1.00

Posted by Owensboro Corp.

(Effective May 25, 1938)
Centralia, Ill.....$1.25

Posted by Stoll Oil Refining Co.

(Effective June 22, 1938)
Stoll Pipe Line Oil (Ky.).....$1.30

CANADIAN FIELDS

Posted by Imperial Oil Limited

Western Ontario

(Effective Sept. 9, 1933)

Petrolia.....$2.10
Oil Springs.....$2.17

Alberta—Turner Valley

(Prices f.o.b. field tankage)

(Effective Jan. 5, 1938)

Crude Oil

40 40 9°	$1 14	53-53.9	$1 40
41-41 9	1.16	54-54.9	1 42
42-42 9	1 18	55-55 9	1 44
43-43 9	1.20	56-56 9	1 46
44-44 9	1 22	57-57 9	1 48
45-45 9	1 24	58-58 9	1 50
46-46 9	1 26	59-59 9	1 52
47-47 9	1.28	60-60 9	1 54
48-48 9	1.30	61-61 9	1 56
49-49 9	1.32	62-62 9	1 58
50-50 9	1 34	63-63 9	1 60
51-51.9	1.36	64-64.9	1.62
52-52.9	1.38		

Crude Naphtha, 65 grav. & above.....$2.14

Absorption Gasoline

90% Rec., 20 lb. Reid v.p.....$1.94
90% Rec., 17 lb. Reid v.p.....$2.08

MID-CONTINENT

*Posted by *Stanolind Jan. 28, 1937*

	(In Oklahoma- *Kansas)	(In North-North Central Texas)
Below 29	$1.06	$0.96
29-29.9	1.08	0.98
30-30 9	1.10	1.00
31-31 9	1 12	1 02
32-32 9	1 14	1 04
33-33 9	1 16	1 06
34-34 9	1 18	1 08
35-35.9	1.20	1.10
36-36 9	1.22	1.12
37-37 9	1.24	1.14
38-38 9	1.26	1.16
39-39 9	1.28	1.18
40 & above	1 30	1 20

*Stanolind Crude Oil Purchasing Co. in Oklahoma, and Stanolind Oil Purchasing Co. in Texas.

Above Stanolind prices met as follows.

Jan. 28, Continental Oil Co. met in Okla., Kans., and North Texas. Sinclair-Prairie met in North Texas and North Central Texas. Jan. 28, Stanolind's North Texas schedule. Same date, The Texas Co. met in North-North Central Texas

Effective June 16, 1938, Kanotex Refg. Co. posted Okla.-Kans. crude, 34 & below, at $1.03, 35-35.9 at $1.05, plus 2c differential to 40 & above, at $1.15.

Note: Stanolind prices in Okla.-Kans. are for quantities computed by 97% tank tables. In Texas, 100% tank tables are used effective Oct. 1, 1937, volume corrected to 60° F., and deduction for full b.s. & w. content.

*Effective Aug. 1, 1937, for Otis-Albert pools Rush-Barton counties, Kans., 13c less.

Posted by Carter Oil Co.

In Oklahoma

(Effective Jan. 28, 1937)

Below 25	$0.98	33-33.9	$1.16
25-25.9	1.00	34-34.9	1.18
26-26.9	1.02	35-35.9	1.20
27-27.9	1.04	36-36.9	1.22
28-28.9	1.06	37-37.9	1.24
29-29.9	1.08	38-38.9	1.26
30-30.9	1.10	39-39.9	1.28
31-31.9	1.12	40 and above	1.30
32-32.9	1.14		

Above Carter schedule met Jan. 28 by the following companies: Sinclair-Prairie, Shell and Barnsdall in Oklahoma-Kansas; Skelly Oil in Kansas; Tide Water in Oklahoma; Pure Oil in Oklahoma-Kansas, beginning with below 24 at $0.98 and ending with 40 & above at $1.30.

Posted by Magnolia Petroleum Co.

(Effective Jan. 28, 1937)

In Oklahoma, same schedule as Carter Oil, which see above, beginning with below 25, at $0.98 and ending with 40 & above, at $1.30.

In Texas: North and North Central, including Burkburnett, Archer, Henrietta, Electra, Comanche and Olden, same gravity and price schedule as Stanolind in North Texas, which see under Stanolind, beginning with below 29 at $0.96 and ending with 40 and above, at $1.20.

Jefferson County, Texas

	Beaumont (Magnolia) (Oct. 1. 1937)	West Beaumont (Humble) (May 1. 1938)
Below 21°	$0.95	$0.95
21-21.9	0.98	0.98
22-22.9	1.01	1.01
23-23.9	1.04	1.04
24-24.9	1.07	1.07
25-25.9	1.10	1.10
26-26.9	1.13	1.13
27-27.9	1.15	1.15
28-28.9	1.17	1.17
29-29.9	1.19	1.19
30-30.9	1.21	1.21
31-31.9	1.23	1.23
32-32.9	1.25	1.25
33-33.9	1.27	1.27
34-34.9	1.29	1.29
35-35.9	for	1.31
36-36.9	oil	1.33
37-37.9	34 & above	1.35
38-38.9		1.37
39-39.9		1.39
40 & above		1.41

TEXAS FIELDS

Posted by Humble Oil & Refining Co.

(*West Central Texas)

(Effective Jan. 28, 1937)

Below 29	$0.96	35-35.9	$1.10
29-29.9	0.98	36-36.9	1.12
30-30.9	1.00	37-37.9	1.14
31-31.9	1.02	38-38.9	1.16
32-32.9	1.04	39-39.9	1.18
33-33.9	1.06	40 and above	1.20
34-34.9	1.08		

*Includes Brown, Callahan, Coleman, Comanche, Eastland, Fisher, Haskell, Jones, Shackelford, Stephens, Throckmorton and Young counties.

Shell Petroleum Corp., effective Jan. 28, posts Humble's above schedule on Fisher county crude, plus these five lower grades, beginning with below 25 gravity at $0.88; 25-25.9, $0.90; 26-26.9, $0.92; 27-27.9, $0.94, and 28-28.9, $0.96; rest of schedule same as Humble's in West Central Texas.

Note: Effective Oct. 1, 1937, Humble prices are based on 100% tank tables at 60F.

East Central Texas

(Effective Jan. 28, 1937)

Below 29	$1.03	35-35.9	$1.17
29-29.9	1.05	36-36.9	1.19
30-30.9	1.07	37-37.9	1.21
31-31.9	1.09	38-38.9	1.23
32-32.9	1.11	39-39.9	1.25
33-33.9	1.13	40 and above	1.27
34-34.9	1.15		

*Including Anderson, Cherokee, Limestone, Navarro counties.

Same date, Sinclair-Prairie met in Mexia Humble's above schedule.

PANHANDLE TEXAS

Posted by Humble Oil & Refining Co.

(Effective Jan. 28, 1937)

	Gray County	Carson-Hutchinson
Below 35	$0.96	$0.91
35-35.9	0.98	0.93
36-36.9	1.00	0.95
37-37.9	1.02	0.97
38-38.9	1.04	0.99
39-39.9	1.06	1.01
40 & above	1.08	1.03

Jan. 28, above prices met by Sinclair-Prairie and Magnolia in the entire area and by Continental in Carson-Hutchinson and by Texas Co. in Panhandle Sweet, same as Humble's Gray Co. and on Panhandle Sour, same as Carson-Hutchinson.

EAST TEXAS

(Effective May 22, 1937)

Stanolind, Humble, Shell, Sinclair-Prairie, Texas Co., and Magnolia.....$1.35

Shell also posted on Jan. 28, in Livingston area, Polk County, Texas $1.27

NORTHEAST TEXAS

(Posted by Humble, Jan. 28, 1937)

Talco.....$0 73

(Posted by Magnolia, Jan. 28, 1937)

Cass County and Panola County, Tex.:

Same gravity and price schedule as S. O. Louisiana posts for Rodessa, La., which see under that company.

(Posted by The Texas Co., Jan. 28, 1937)

Cass County.....$1.25

WEST TEXAS AND NEW MEXICO

Posted by Humble Oil & Refining Co.

(Effective Jan. 28, 1937)

(Including Andrews, Crane, Crockett, Ector, Glasscock, Howard, Winkler and Upton Counties, Texas and Lea county, New Mexico).

Below 26	$0 78	33-33 9	$0 94
26-26 9	0 80	34-34 9	0 96
27-27 9	0 82	35-35.9	0 98
28-28 9	0 84	36-36.9	1 00
29-29 9	0 86	37-37.9	1 02
30-30.9	0 88	38-38.9	1.04
31-31.9	0 90	39-39.9	1 06
32-32.9	0 92	40 & above	1 08

Pecos, West Texas.....$0 91

Jan. 28, Magnolia met Humble in Crane, Upton, Howard, Glasscock, Mitchell and Winkler.

Shell Petroleum Corp., on Jan. 28, met Humble in Crane, Glasscock, Howard, Pecos (except Yates shallow pool), Winkler, and Upton counties, Tex., and in Lea County, N. Mex. On Jan. 28, Shell posted in Yates shallow pool in Pecos county, Tex., $0.81. June 4, 1937, Shell added Ector county to West Texas postings.

Jan. 28, Stanolind Oil & Gas Co. met Humble in Hendrick field, Winkler county.

Jan. 28, Texas Co. met Humble in Ward and Winkler counties, Tex., and Lea County, N. M. except that its top grade is 36 and above, at $1.00.

April 20, 1937, Sinclair Prairie met Humble in Ward and Winkler, Tex. and Lea, N. M., counties, except that its gravity schedule ends with 36 and above, at $1.00.

Posted by Continental Oil Co.

(Effective Jan. 28, 1937)

Artesia, Jackson and Maljamar pools, N. M...$0.90

COLORADO

(Posted by Continental Oil Co., Effective Jan. 28, 1937)

Ft. Collins and Wellington

Below 29	$1 01	35-35.9	$1 15
29-29.9	1.03	36-36.9	1.17
30-30.9	1.05	37-37.9	1.19
31-31.9	1.07	38-38.9	1.21
32-32.9	1.09	39-39.9	1.23
33-33.9	1.11	40 & above	1.25
34-34.9	1.13		

Cannon City and Florence, Col.....$1.10

SOUTH AND SOUTHWEST TEXAS

All Shown Below Posted by Humble Oil & Refining Co.

(Effective Jan. 28, 1937)

Carroll, Clark, Darst Creek, Hilbig, Salt Flat and Zoboroski fields.....$1.09
Pettus.....$1.37 **Van Zandt.....$1.10**

Jan. 28, Magnolia met Humble in Darst Creek; posted $1.00 in Luling; $1.12 in Lytton Springs; $1.27 for Cloveland, and $1.15 in Hardin, both in Liberty county, Tex.

Jan. 28, 1937, The Texas Co. met Humble in Darst Creek.

Anahuac, Dickinson, Flour Bluff and Turtlebay

(Effective Jan. 28, 1937)

Below 31	$1.16	36-36.9	$1 28
31-31.9	1.18	37-37.9	1 30
32-32 9	1.20	38-38 9	1 32
33-33.9	1.22	39-39.9	1 34
34-34.9	1 24	40 and above	1 36
35-35.9	1 26		

Conroe, Raccoon Bend (Deep sand crude) Tomball and Satsuma

(Effective Jan. 28, 1937)

Below 29	$1 20	35-35.9	$1 34
29-29.9	1.22	36-36.9	1 36
30-30.9	1.24	37-37.9	1 38
31-31.9	1.26	38-38.9	1 40
32-32.9	1.28	39-39.9	1 42
33-33.9	1.30	40 & above	1 44
34-34.9	1.32		

Jan. 28, Magnolia met Humble in Tomball and Texas Co. met Humble in Conroe, beginning with 35-35.9 gravity.

Jefferson County, Tex.

West Beaumont, see prices under Magnolia in center column.

(Continued on next page)

CRUDE OIL MARKETS

(Continued from preceding page)

South-Southwest Texas (cont'd)

Posted by Humble

***Mirando**

(Effective July 6, 1937)

Below 21	$0.96	31-31.9	$1.18
21-21.9	0.98	32-32.9	1.20
22-22.9	1.00	33-33.9	1.22
23-23.9	1.02	34-34.9	1.24
24-24.9	1.04	35-35.9	1.26
25-25.9	1.06	36-36.9	1.28
26-26.9	1.08	37-37.9	1.30
27-27.9	1.10	38-38.9	1.32
28-28.9	1.12	39-39.9	1.34
29-29.9	1.14	40 & above	1.36
30-30.9	1.16		

*Includes Duval, Jim Hogg, Webb and Zapata counties, Tex. and Heyser and Placedo crudes.

July 6, Magnolia posted same schedule as Humble in Mirando.

July 6, 1937, Texas Co. posted for Duval-Mirando, $0.96 for below 21, plus 2c differential, to $1.12 for 28 & above.

LOUISIANA-ARKANSAS

Posted by Standard Oil Co. of Louisiana

	*N. La.-Ark.	Rodessa, La.	So. La. Roanoke N. Crowley
	(Effective Jan. 28, 1937)		(Dec. 28,'37)
Below 21°	$0.90	$0.93	$0.90
21-21.9	for	for	93
22-22.9	oil	oil	96
23-23.9	Below	Below	99
24-24.9	25°.	25°	1.02
25-25.9	$0.92	$0.95	1.05
26-26.9	94	.97	1.08
27-27.9	96	.99	1.10
28-28.9	98	1.01	1.12
29-29.9	1.00	1.03	1.14
30-30.9	1.02	1.05	1.16
31-31.9	1.04	1.07	1.18
32-32.9	1.06	1.09	1.20
33-33.9	1.08	1.11	1.22
34-34.9	1.10	1.13	1.24
35-35.9	1.12	1.15	1.26
36-36.9	1.14	1.17	1.28
37-37.9	1.16	1.19	1.30
38-38.9	1.18	1.21	1.32
39-39.9	1.20	1.23	1.34
40 & above	1.22	1.25	1.36

*Includes Caddo, Homer, Haynesville, Sabine, De Soto, Sarepta, Carterville, El Dorado, Bunkie and Miller county.

Smackover, Ark. $0.90

Urania, La. (Arkansas Fuel Oil Co., Jan. 28, '37) $1.02

Tepetate, La. (Continental Oil, Jan. 28, '37) ... 1.24

Jan. 28, 1937, Magnolia met S. O. La.'s No. La.-Ark. gravity and price schedule in Pine Island, Haynesville, Bull Bayou and Cotton Valley, La., and in Eldorado and Rainbow districts, Ark.; and met S. O. La.'s Rodessa prices; and in Lockport, Iowa, Cameron Meadow, La., posted Humble's gravity and price schedule on Mirando. El Dorado East Field, Ark. price same as Smackover, effective Jan. 28, '37.

Jan. 28, The Texas Co. met S. O. La. in N. La., except that its gravity schedule begins with below 27 at $0.94. It posted $1.37 for Garden Island, La., $1.24 for LaFitte, La. and $0.90 for Smackover.

***GULF COASTAL FIELDS**

Posted by Humble Oil & Refining Co. and The Texas Co.

	Humble	Texas	Saxet (Humble)
	(Effective Jan. 28, 1937)		(July 6 '37)
Below 18	$0.95	‡$0.95	....
18-18.9	for	for	....
19-19.9	below	below	....
20-20.9	21°	21°	$1.01
21-21.9	0.98	0.98	1.03
22-22.9	1.01	1.01	1.05
23-23.9	1.04	1.04	1.07
24-24.9	1.07	1.07	1.09
25-25.9	1.10	1.10	1.11
26-26.9	1.13	1.13	1.13
27-27.9	1.15	1.15	1.15
28-28.9	1.17	1.17	1.17
29-29.9	1.19	1.19	1.19
30-30.9	1.21	1.21	1.21
31-31.9	1.23	1.23	1.23
32-32.9	1.25	1.25	1.25
33-33.9	1.27	1.27	1.27
34-34.9	1.29	1.29	1.29
35-35.9	1.31	for	1.31
36-36.9	1.33	oil	1.33
37-37.9	1.35	34°	1.35
38-38.9	1.37	and	1.37
39-39.9	1.39	above	1.39
40 and above	1.41	....	1.41

†Refugio

(Effective July 6, 1937)

Posted by Humble

20-20.9	$1.01	23-23.9	$1.07
21-21.9	1.03	24-24.9	1.09
22-22.9	1.05	25-25.9	1.11

Rest of schedule same as Humble's Gulf Coastal crude prices.

†Includes Saxet, Greta, O'Connor-McFadden, Taft, Plymouth and Tom O'Connor crude.

*Humble's prices apply in these Texas fields: Amelia, Barbers Hill, Clinton, Goose Creek, Hull, Liberty, Mykawa, Orange, Pierce Junction, Racoon Bend, (shallow sand), Sugarland, Thompsons, and West Columbia. Same prices also apply, effective Feb. 1. 1938, in Clinton, Tex., posted by Stanolind Oil Purch. Co.

Jan. 28, Sinclair-Prairie met above Humble schedule in full.

‡$0.95 for oil below 21° posted April 1, 1938.

July 6, 1937, The Texas Co. posted for Refugio, which includes Greta, Saxet and Taft: $1.01 for below 21, plus 2c differential, to $1.17 for 28 & above.

Texas Co. postings in Gulf Coastal Texas include: Arriola, Five Corners, Ganado, Humble, Liberty, Magnet, Manvel, Markham, Mauritz, McFaddin, Pickett Ridge, Port Neches, Sour Lake, West Columbia and Withers. In Gulf Coastal Louisiana: Bay St. Elaine, Caillou Island, Dog Lake, Four Isle, Gillis, Horseshoe Bayou, Iberia, Lake Barre, Lake Pelto, Leesville and Port Barre.

ROCKY MOUNTAIN FIELDS

Posted by Stanolind Oil & Gas Co.

(Effective Jan. 28, 1937)

Salt Creek, (except Tensleep crude), Midway and Dutton Creek, Wyo., same schedule as Stanolind posts in Oklahoma, Kansas which see under Mid-Continent crude on previous page.

(Effective Jan. 6, 1938)	
Tensleep, Salt Creek field	$0.70
(Effective Jan. 28, 1937)	
Greybull-Torchlight	$1.30
Iles, light, Col	1.18
Iles, heavy	1.12
Hogback, N. M	1.33
Big Muddy	1.23
Elk Basin, light	1.30
Grass Creek, light	1.30
(Effective May 1, 1938)	
Frannie light	0.65
Grass Creek, heavy	$0.50
Hamilton Dome, Wyo	0.45
(Effective Nov. 4, 1936)	
Frannie heavy	0.62

Posted by Ohio Oil Co.

(Effective Jan. 28, 1937)	
Elk Basin, Wyo	$1.30
Grass Creek, light	1.30
Rock Creek	1.205
Lance Creek	0.97
(Effective May 1, 1938)	
Grass Creek heavy	$0.50
(Effective Nov. 16, 1937)	
Sunburst, Mont	$0.90

Posted by Continental Oil Co.

(Effective Jan. 1, 1938)	
Cat Creek, Mont	$1.30
(Effective Jan. 28, 1937)	
Big Muddy, Wyo	1.18
Lance Creek, Wyo	0.97

CALIFORNIA, *Posted by Standard Oil of California*

All gravities above those quoted take highest price offered in the field. Prices effective Feb. 26, 1936, except Huntington Beach, Playa del Rey, Santa Fe Springs, Kern Front, Signal Hill (Long Beach) effective March 7, 1936; Elk Hills effective June 22, 1936; Lakeview Area, Aug. 19, 1936; El Segundo and Wilmington, Oct. 15, 1937; Greeley-Canal, Dec. 22, 1937; Santa Maria Valley, by Union Oil, May 20, 1938.

Gravity	Signal Hill (Long Beach) El Segundo †Wilmington	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda Brea Canon	Athens Rosecrans	Dominguez	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	‡Newhall and others	Mountain View	Elk Hills	Buena Vista Hills Midway-Sunset Lakeview Area	Greeley-Canal (Ker) County)	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria (Union Oil)
13-13.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	$0.40
14-14.9	$0.80	0.79	0.74	0.78	0.79	0.80	0.76	....	....	0.80	0.76	0.76	0.77	0.78	....	0.70	....	0.70	0.70	....	0.70	0.70	....	.42
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.70	.70	....	.70	.70	....	.44
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.70	.70	....	.70	.70	....	.45
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.70	.70	....	.70	.70	....	.46
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	.82	.76	.76	.77	.78	....	.70	....	.70	.70	....	.70	.70	....	.47
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	....	.85	.76	.78	.77	.78	....	.70	.70	.74	.74	....	.74	.71	.70	.48
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	.88	.78	.82	.77	.80	....	....	.70	.78	.78	....	.78	.72	.70	....
21-21.9	.88	.79	.74	.89	.93	.93	.88	....	....	.91	.80	.85	.77	.84	.78	....	.73	.82	.82	....	.82	.74	.70	....
22-22.9	.92	.82	.74	.92	.96	.98	.92	....	....	.93	.84	.89	.79	.88	.78	....	.77	.87	.87	....	.86	.78	.72	....
23-23.9	.95	.86	.77	.96	.99	1.02	.96	.84	.79	.96	.88	.93	.82	.92	.78	....	.80	.92	.92	....	.90	.82	.76	....
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	.99	.91	.96	.85	.96	.82	....	.84	.97	.97	....	.94	.86	.79	....
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	1.02	.95	....	.89	.99	.86	....	.88	1.01	1.01	....	.98	.90	.83	....
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	1.05	.98	....	.92	1.03	.90	....	.91	1.06	1.06	....	1.02	....	....	....
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	1.02	....	.96	1.06	.95	....	.95	1.10	1.10	$0.84	1.06	....	....	....
28-28.9	1.14	1.10	.90	1.14	1.15	....	1.14	1.07	.90	....	1.06	....	.99	1.10	.99	....	.99	1.15	1.15	88	1.10	....	....	....
29-29.9	1.17	1.15	.93	1.18	1.18	....	1.17	1.12	.93	....	1.09	....	1.03	1.14	1.03	....	1.02	1.20	1.20	92	1.14	....	....	....
30-30.9	1.21	1.19	.95	1.22	1.21	....	1.21	1.17	.95	....	....	....	1.07	1.17	1.08	....	1.06	1.25	1.25	95	1.18	....	....	....
31-31.9				....	1.24		1.24	1.22	.97	....	....	....	1.11	1.21	1.12	....	1.09	1.29	1.29	99				....
32-32.9		*Elwood Terrace		....	1.27		1.27	1.27	1.00	....	....	....	1.14	1.25	1.16	....	1.13	1.34	1.34	1.03	Kettleman Hills			....
33-33.9	....	1.28	....	....	....		....	1.32	....	....	....	....	1.18	1.28	1.20	....	1.17	1.38	1.38	1.07	....	1.19	....	....
34-34.9	....	1.32	....	....	....		....	1.37	....	....	....	....	1.22	1.32	1.25	....	1.20	....	....	1.11	....	1.23	....	....
35-35.9	....	1.35	....	....	....		....	1.42	....	....	....	....	1.25	....	1.29	....	....	....	....	1.15	....	1.27	....	....
36-36.9	....	1.39	....	....	....		....	1.46	....	....	....	....	1.29	....	1.33	....	....	....	....	1.19	....	1.31	....	....
37-37.9	....	1.43	....	....	....		....	1.51	....	....	....	....	1.32	....	1.37	....	....	....	....	1.23	....	1.35	....	....
38-38.9	....	....	....	....	....		....	1.56	....	....	....	....	1.36	....	1.42	....	....	....	....	1.27	....	1.39	....	....
39-39.9	....	....	....	....	....		....	1.61	....	....	....	....	1.40	....	....	....	....	....	....	1.31	....	1.43	....	....
40-40.9	....	....	....	....	....	F. O. B. Standard Pipe Line	....	1.66	....	....	....	....	1.43	....	....	....	....	....	....	1.34	....	....	....	....
41-41.9	....	....	....	....	....		....	....	....	....	....	....	....	....	....	....	....	....	....	1.38	....	....	....	....
42-42.9	....	....	....	....	....		....	....	....	....	....	....	....	....	....	....	....	....	....	1.41	....	....	....	....
43-43.9	....	....	....	....	....		....	....	....	....	....	....	....	....	....	....	....	....	....	1.45	....	....	....	....
44-44.9	....	....	....	....	....		....	....	....	....	....	....	....	....	....	....	....	....	....	1.49	....	....	....	....
45-45.9	....	....	....	....	....		....	....	....	....	....	....	....	....	....	....	....	....	....	1.53	....	....	....	....
46-46.9	....	....	....	....	....		....	....	....	....	....	....	....	....	....	....	....	....	....	1.56	....	....	....	....
47-47.9	....	....	....	....	....		....	....	....	....	....	....	....	....	....	....	....	....	....	1.60	....	....	....	....
48-48.9	....	....	....	....	....		....	....	....	....	....	....	....	....	....	....	....	....	....	1.64	....	....	....	....

*F. o. b. ship.

‡Also McKittrick, Kern River. Kern Front and Round Mountain $0.70 thru 19.9 gravity; no higher gravity quoted.

†Wilmington prices differ on gravities below 18.9. Prices are: 14-16.9, $0.75; 17-17.9, $0.77; and 18-18.9, $0.79; rest of schedule same as Signal Hill.

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Coming Meetings

Michigan Petroleum Exposition, Island Park, Mt. Pleasant, Mich., July 26 to 30.

West Virginia Oil and Natural Gas Assn., Charleston, W. Va., July 27, 28.

Mississippi Oil Dealers, Jackson, Miss., some time in Sept.

American Chemical Society, Milwaukee, Wis., Sept. 5 to 9.

Kentucky Petroleum Marketers Assn., annual fall conference and golf tournament, Brown Hotel and Big Spring Golf Club, Louisville, Sept. 8.

National Petroleum Assn., 36th annual meeting, Hotel Traymore, Atlantic City, Sept. 14, 15 and 16.

Oil Trades Assn. of New York, sports day, Pelham Country Club, Pelham, N. Y., Sept. 20.

National Association of Petroleum Retailers, annual meeting, St. Louis, Sept. 27, 28 and 29.

American Assn. of Petroleum Geologists, mid-year meeting, under direction of West Texas Geological Society, El Paso, Tex., Sept. 27-Oct. 2.

National Lubricating Grease Institute, 6th annual meeting, Chicago, Oct. 3 and 4.

Ohio Petroleum Marketers Assn., fall conference and golf tournament, Youngstown, O., Oct. 5, 6.

American Institute of Mining and Metallurgical Engineers, Petroleum Division, San Antonio, Tex., Oct. 6, 7.

New England States Tax Officials Assn., 26th annual conference, Bangor, Me., Oct. 6, 7.

Society of Automotive Engineers, national regional fuels and lubricants meeting, Tulsa, Okla., Oct. 6 and 7.

Indiana Independent Petroleum Assn., Fall convention, Hotel Severin, Indianapolis, Ind., Oct. 12 and 13.

National Stripper Well Assn., annual meeting, Tulsa, Okla., Oct. 18.

Oklahoma Stripper Well Assn., annual meeting, Tulsa, Okla., Oct. 18.

Independent Petroleum Assn. of America, Tulsa, Okla., Oct. 19, 20 and 21.

American Inst. of Mining & Metallurgical Engineers, Petroleum Divsn., Los Angeles, Oct. 20, 21.

National Assn. of Credit Men, Petroleum Refiners Divsn., Indianapolis Athletic Club, Indianapolis, Ind., Oct. 24, 25, 26.

National Petroleum Assn. Dept. of Fire & Accident Prevention, Semi-Annual Meeting, Olean, N. Y., Oct. 26.

Mid-Continent Oil & Gas Assn., Texas Division, San Antonio, Tex., Oct. 27, 28, 29.

Oil Trades Assn. of New York, annual banquet, Waldorf-Astoria Hotel, New York, Nov. 1.

National Automobile Show, Grand Central Palace, New York, Nov. 11 to 18.

National Motor Truck Show, Port of New York Authority Bldg., New York, Nov. 11 to 18.

Society of Automotive Engineers, annual dinner, Commodore Hotel, New York, N. Y., Nov. 14.

American Petroleum Institute, 19th annual meeting, Stevens Hotel, Chicago, Ill., Nov. 14 to 18.

American Society of Mechanical Engineers, Philadelphia, Pa., Dec. 4 to 9.

Exposition of Chemical Industries, Grand Central Palace, New York, Dec. 4 to 9.

Nebraska Petroleum Marketers, Inc., Omaha, Nebr., Dec. 6 to 8.

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Society of Automotive Engineers, annual meeting, Detroit, Mich., Jan. 9 to 13.

Northwest Petroleum Assn. (Minn. Division), Lowry Hotel, St. Paul, Minn., Jan. 26 and 27.